Preface and Acknowledgments

Patents played, and may be still playing, an indispensable role in promoting innovation in developed countries such as the United Kingdom, the United States, Germany and Japan. Yet they have become a target of increasing criticism in these countries for blocking innovation and access to medicine due to broad, extended and overlapping protection. What role, then, do patents play in China, the world's largest developing country with a relatively high technological capacity but still in transition from imitation to innovation? How can China use patents to stimulate innovation while avoiding adverse effects that they have had in developed countries? Those issues are the focus of this book as it explores China's biotechnology and pharmaceutical patenting.

Seven years ago when I started this project, I had a rather simple goal in mind, that is, to ascertain how China's patent law governs biotechnology and pharmaceutical inventions. I planned to focus on legislation only, to compare Chinese law on biotechnology and pharmaceutical patenting with the laws of other countries. However, as the research progressed I became less satisfied than I had been with the existing literature and my original goal. I found that analyzing law without understanding the industries and technology that it governs is like building a skyscraper on sand. My research therefore expanded to include industries, markets and R&D capacity, all of which proved more challenging than I expected. There is a sea of materials and statistics that lack authority and consistency, in need of constant verification and updating. Understanding the science of biotechnology and pharmacology was another fascinating but tremendous challenge. I was humbled by the long and painful process of learning, and grateful for all the help and insight I received from some distinguished scientists at the University of Hong Kong (HKU): Professors C.M. Che of the Department of Chemistry and Professor William Mak of the former Director of Genome Research Center. I was also very fortunate to have had a 'private tutor' to consult with on a daily basis. My husband, Professor X.Y. Guan, a cancer geneticist at HKU Faculty of Medicine, constantly rescued me from the frustration of understanding the difficult concepts of biotechnology. The project would not have moved as smoothly without him.

I met an even greater challenge when trying to understand the implications of business statistics and the scientific literature on patent law, and how patent law influences business and scientific activities. In these areas I was guided by the late Professor John Barton of Stanford Law School, with his enlightening and often provocative questions, comments and suggestions. An ongoing exchange of ideas with him helped to deepen my analyses and arguments, particularly in relation to how patents help to commercialize biotechnology and pharmaceutical inventions, the role of private funding and government support for scientific research, the differences between the commercialization processes of the United States and China, and whether antitrust law has any place in solving the problem of monopoly in China's biotech patenting. I also benefited significantly from the suggestions and comments of Professors Mark Lemley and Henry Greely of Stanford Law School, who were instrumental in shaping my research direction and questions, particularly with respect to the relationship between patent law and the diversification of technologies, and ethical issues in China's biotechnology and pharmaceutical research. The discussion on the interplay between patents and business, science and ethics was further enriched by insights and information from the following scholars and professionals of various disciplines: Professor Paul Cheung, Director of HKU Technology Transfer Office, Professor Tao Zhigang of HKU School of Business, Professor Dan Yang of HKU Department of Chemistry, Professor Edwin Hui of HKU Faculty of Medicine, Mr Alan Fan of Huawei Technologies Co. Ltd, Ms Lin He of Wyeth, and Dr Minyue Zhang of Nanjing University.

The most difficult part of the project, however, was that there had been three drafts and one final amendment to the Chinese patent law since I undertook my research, necessitating constant changes to my manuscript. Another difficulty lay in finding the statistics of patent filings for the biotech and pharmaceutical industries because they were recorded based on patent categories, patent applicants, or by country rather than by industry. In addition to reading the scattered reports and articles on China's biotech and pharmaceutical industries, I enlisted Ms Shan Chi's help in finding the patent applications for biotechnology and pharmaceutical inventions and the subsequent decisions made by China's patent office. In assessing the difficulties and problems embedded in the country's biotechnology and pharmaceutical patenting, I benefited from discussions with Dr Yonghong Li of China's State Intellectual Property Office, Professor Naigen Zhang of Fudan University, Professor Xi Wang of Shanghai Jiaotong University, and Mr Xun Xu of Shanghai Patent and Trademarks Office LLC.

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The completion of this book would not have been possible without understanding and support from the Dean of HKU Faculty of Law, Professor Johannes Chan, and the former and current Heads of HKU Department of Law, Mr Michael Jackson and Professor Hualing Fu. I am also grateful for the opportunity provided by HKU to participate in two university strategic research themes – Drug Discovery and Synthesis, and Ethical and Legal Issues for Genomics, Proteomics and Bioinformatics – from which I learned more than I contributed. I was also fortunate to receive a significant grant from the Research Grant Committee of Hong Kong government which was very important in helping me carry out my research.

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This book is dedicated to the late Professor John Barton, my JSD supervisor at Stanford Law School, who passed away shortly before the manuscript was completed. I am saddened by the fact that he will never see the book in print, and feel profoundly honored to have his Foreword published in the book, displaying his deep concern about the conflict between patents and social development, his tireless search for a better solution, and his wholehearted support for the endeavors of a younger generation of intellectual property law scholars. The publication of this book now has a new meaning – it is a living testimony of Professor Barton's life-long dedication and contribution to legal education and to the scholarship of intellectual property law, particularly on the interplay between law, science and social development.

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