Preface

This volume represents the first English-language anthology of essays by multiple authors that is devoted exclusively to the practices of science in the Spanish and Portuguese empires. The collection covers a wide geographic and chronological range, from Iberia to Latin America to Asia and the Pacific Rim, and from the end of the fifteenth to the beginning of the nineteenth century. The book's main purpose is to show that the Spanish and Portuguese empires were active participants in the practices of science during the early modern period. In this way, it provides a much needed study of the Spanish and Portuguese contributions to the Scientific Revolution in Europe and abroad, a topic about which very little has been published in English, despite its importance for scholars and for students in the university classroom.[1] Similarly, although in the past few decades the complex relationship between science and empire has received enormous attention from specialists in a wide range of fields, the vast majority of studies have focused on the French, German, and British colonies, while the Iberian colonial experience has received remarkably little treatment in Anglophone literature.[2]

The idea for putting together this volume originated with two different panel presentations on Iberian imperial science on which several of the contributors participated, one at the History of Science Society's annual meeting in 2002 and the other at the Latin American Studies Association conference of 2003. The enthusiastic response we received for both presentations encouraged us to proceed with this volume. We were further convinced by the fact that over the last ten years, several writers surveying the existing literature on colonial and imperial science have decried the lack of publication on the Iberian cases and emphasized their crucial importance for redressing imbalances and promoting a more global understanding of the development of early modern science.[3] In addition, the proliferation of programs and course offerings in Latin American history and literature, world history, cultural studies,

and sociology and philosophy of science has led to a growing body of scholars who are interested in these themes, and a deeply felt need for publications that can be used in their research and teaching. The impetus for this book thus arose out of these two preoccupations: a historiographical lacuna that needed to be addressed, and a desire to offer our own students, as well as other students and scholars, the opportunity to learn about the sciences in the Spanish and Portuguese empires through a series of articles, written by specialists, that would be helpful in the broadest possible range of disciplinary and topical settings.

The intended audience for this volume is a wide-ranging variety of scholars from different fields and disciplines. The volume should appeal to historians and literary scholars of colonial Latin America, early modern Spain and Portugal, and the Iberian Asia-Pacific; historians of early modern and Enlightenment science; and historians of medicine. It will also provide valuable comparative information and analysis for scholars of European imperialism and colonialism in general from the end of the fifteenth to beginning of the nineteenth century, but particularly scholars of the British empire. In its recognition of the social construction of science, the link between knowledge and power, and the role of knowledge in the formation of colonial identities, this volume, we believe, will also interest scholars from a variety of disciplines, including sociology and philosophy of science, cultural, postcolonial and subaltern studies, and cultural and medical anthropology. In addition to its appeal to specialists, the book is also intended for use in the classroom, for both upper-level undergraduate and graduate students in the fields identified above. Its chapters can be used to teach many different undergraduate and graduate courses, including courses in world history, Latin American and European history, history of science, technology, medicine, Latin American and European studies, and comparative colonialism.

This book gathers original contributions from senior scholars, many of whom have produced key works in their field, and younger scholars, whose work illustrates the new directions in which this type of research is moving. The group is interdisciplinary, including authors from the fields of history, history of science, art history, and literature; it is also international, bringing together scholars based in the United States, Europe, and Latin America. We believe the heterogeneity of the group reflects the richness of the topic and of the scholarship currently being produced in a burgeoning field.

The volume is divided into four parts, designed to address significant themes and methodologies that have emerged in a variety of disciplines, including the history and philosophy of science; Latin American, Atlantic World, and Pacific Rim history; as well as literary, cultural, subaltern, and postcolonial studies. Chief among these themes, and related to each of the parts, is a general assessment of Iberian science in terms of its crucial yet undervalued influence on the development of the western scientific tradition in the early modern period. Thus Part I, "Reassessing the Role of Iberia in Early Modern Science," consists of historiographical contributions in which David Goodman, Palmira Fontes da Costa, and Henrique Leitão provide an overview of the current state of scholarship on early modern science in Spain and Portugal and their respective empires. These three authors emphasize the contribution of interdisciplinary studies in promoting better understanding of scientific activities in the Iberian world.

A second aim of the volume is to challenge traditional core/periphery models that place Europe at the center of scientific knowledge production by characterizing colonial science as essentially subordinate, derivative, or imitative. This theme is taken up in two separate but complementary sections of the volume. Part II, "New Worlds, New Sciences," challenges traditional "diffusionist" models based on the assumption that European scientific knowledge spread unidirectionally from a European "core" to a colonial "periphery." By focusing on the ways in which the natural world of the Americas served to complicate and alter European categories of knowledge and methods of determining truth, this section thus emphasizes the dialectical and multidimensional nature of knowledge production. In this vision, no single region is privileged at the expense of others in terms of the legitimacy or primacy of its scientific tradition. Part III, "Knowledge Production: Local Contexts, Global Empires," focuses on the importance of local scientific traditions that developed in the empire and the crucial issue of translating the meaning of this new knowledge between different cultures. It also points to the fact that "local" contexts do not necessarily mean "colonial": local knowledge was produced in Spain as well in response to information coming in from the Americas.

The final portion of the volume deals with the practicalities of empire. Part IV, "Commerce, Curiosities, and the Circulation of Knowledge," agrees with recent scholarship in breaking down the traditional dichotomy made between science for curiosity's sake and science carried out in the interest of economic gain.[4] The essays in this section address the commercial motivation for much of the scientific activity that took place in the Spanish empire, from the sixteenth to the eighteenth century. Yet

they also examine the role of intellectual inquiry, exchange, and representation that was involved in this activity. In this way, they demonstrate that so-called "pure" and "applied" scientific activities are inherently intertwined and mutually reinforcing rather than mutually exclusive. The volume also includes an introduction by Jorge Cañizares-Esguerra and an afterword in response to the essays in this collection by Noble David Cook and Alexandra Parma Cook.

As a group, the essays have several underlying goals and assumptions that unite them. First, they aim to challenge traditional assumptions about the rise of early modern science by exploring and presenting new explanations concerning the nature of knowledge production, colonial hegemony, and the ways in which both power and knowledge move and transform in different contexts. These articles also recognize the political and economic motivations of the scientific enterprise in the colonial context. They acknowledge that scientific "truth" is not simply discovered but rather constructed within a complex network of legitimizing institutions and paradigms. In addition, they recognize the importance of indigenous participation and influence in the construction of colonial systems of knowledge, and the fact that so-called "peripheral" science is by no means a derivative handmaiden to that of the metropolis. Finally, this collection proposes alternative ways of studying the development of science, calling for a new emphasis on the specificity of local factors in the construction of knowledge.