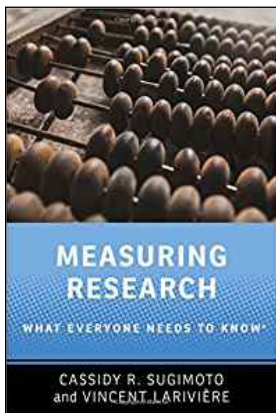be, considers the challenges it faces to modify spaces to get there, and then begins the design work.

The discussion begins with an explanation of why the Road Map approach should be considered when doing a renovation. It explores the drivers of change that different libraries are facing and factors that are acting as inhibitors. Next, the authors outline the six steps of a Road Map. A vast amount of the discussion focuses on the first three steps, which include assessment or analysis, engagement with appropriate parties and patrons, and defining how collections and programs intersect with the vision. This gathering of data is important to understand what is important and impactful to ensure value in the final product. The other three steps in the process are design, phasing, and budgeting. Budgeting takes into consideration the fact that the work will be done in phases. This addresses the challenge some libraries may face if they cannot produce enough funds up front. Each phase can happen independently if needed. Since funding is a critical detail in every project, the authors provide a whole chapter focused on understanding renovations budgets. Since collections can take up a significant amount of space within the areas being renovated, the authors include a chapter on collection storage as well. Different ways of shelving and storing collections are presented with accompanying data that the reader will find to be easily understandable.

*Planning Optimal Library Spaces* is clear and easy to read. The glossy color photographs and images help to add to what is discussed. The reader is taken from a general discussion of how to use a Road Map in library master planning to actually seeing it employed in multiple case studies. Actually seeing the academic libraries transformed in the case studies is very educational. This book is recommended for any director or dean considering a renovation project. It provides a lot of useful information even if one does not use the Road Map approach.—*Mark E. Shelton, College of the Holy Cross*

**Cassidy R. Sugimoto and Vincent Larivière.** *Measuring Research: What Everyone Needs to Know*. New York: Oxford University Press. 2018. 149p. Paper, $16.95 (ISBN 978-0-19-064012-5). LC 2017-18852.

This book's title is a bit of a misnomer; the research that is being measured is primarily scientometric or bibliometric research, There is nothing at all wrong with this focus, but buyers and readers should be aware that it does not cover all forms of research in all fields. That said, it is an excellent guide to scientometric research. The authors state the purpose up front: "This book is of a different nature: it provides, in accessible terms, an overview of the historical foundations, key concepts and terms, guides to interpretation, critiques, and recommendations for measuring research" (3). Their summary near the end of the book is, to an extent, a bit clearer as to purpose: "In many ways, measuring research begins with the data. Data providers and indexers must be accountable for ensuring that their data are accurate and transparent, providing information on inclusion criteria or coverage" (122). The latter description is more telling as to the content of the book.

The foregoing may seem to be a negative beginning to this review. It should be noted that the actual purpose of the book is fulfilled completely and admirably. Many researchers employ data that are based on citations and characteristics of the literature (especially journals). These researchers may have some awareness of the sources of data, but they are not fully versed in the various tools that can be used to extract data and data indicators from the

sources. From the standpoint of research and academic policy, it may be the case that a *little* knowledge can be a dangerous thing. The data sources are complex and each is unique; it requires a substantial body of knowledge and skill to manipulate data effectively. Fortunately, Sugimoto and Larivière provide a thorough and clear description and guide—complete with numerous suggestions—to assist researchers in many fields (the efficacy of their work is by no means limited to researchers in library and information science).

Early in the book the authors get right to the point by addressing a set of essential questions: "What is a citation index?" "What is the Web of Science?" "What is Scopus?" "What is Google Scholar Citations?" Each question is answered with clarity and completeness, and the answers to the questions provide historical and structural background for each source of data. Moreover, Sugimoto and Larivière offer detailed comparisons (including inherent biases) of the various data sources. This is particularly helpful for inquirers who want to study comparative productivity of scholars, fields, or institutions. Many individuals want to identify trends in scholarship and hot topics and relate what they find to policy matters in institutions.

The largest section of the book is devoted to data indicators. Sugimoto and Larivière begin this section with a necessary analysis of authorship. As they state, "Authorship attribution practices vary by discipline. The classical notion of authorship can be found in the arts, humanities, and most of the social sciences; that is, authorship is indistinguishable from the act of writing" (50). In other disciplines, though, "authorship" of, say, a journal article can signal any kind of work that contributes to the final product. This may include data collection and/or analysis, methodological structuration, and actual writing. As the authors point out, the scientific and medical disciplines frequently include as authors the workers in a laboratory who had something to contribute to the work as finally published. The numbers of authors can sometimes reach the dozens, if not the hundreds. Sugimoto and Larivière point out that things like author order, numbers of authors, and uniform ethics regarding authorship remain problematic. Such vagaries as these render examination of phenomena such as collaboration a difficulty.

One thing that should be noted is that the authors provide data and graphics related to authorship and publication dynamics. For instance, they discuss impact factor (and impact in general) and provide some charts that illustrate these kinds of factors when it comes to data sources and indicators. The potential policy and practice uses of impact factor by higher education administrators are included and noted as misuses. These uses include such measures as the *h*-factor and Eigenfactors. They disabuse readers of some common assumptions as well, such as the one that holds that scientific value and citations are linked (76–79). Warnings about such phenomena as self-citation (which can be used to "game" citation counting) are also expounded upon.

Sugimoto and Larivière conclude their book with what they call the "Big Picture," which should be read by all scholars. Among other things, they call the public good of scholarly communication into question and make special reference to commercial data sources and market-driven measures. If there are shortcomings to this book (such as absence of criticism of sources like Academic Analytics), they are few and far between. This work is so useful that every library should acquire it to support the research enterprise of its community. The price also leads to a conclusion that individuals can and should purchase the book. To reiterate an earlier point, many potential readers will be enlightened about data sources and measures. Sugimoto and Larivière have performed an excellent service to research.—*John M. Budd, University of Missouri*