Doing Global Science: A Guide to Responsible Conduct in the Global Research Enterprise

InterAcademy Partnership
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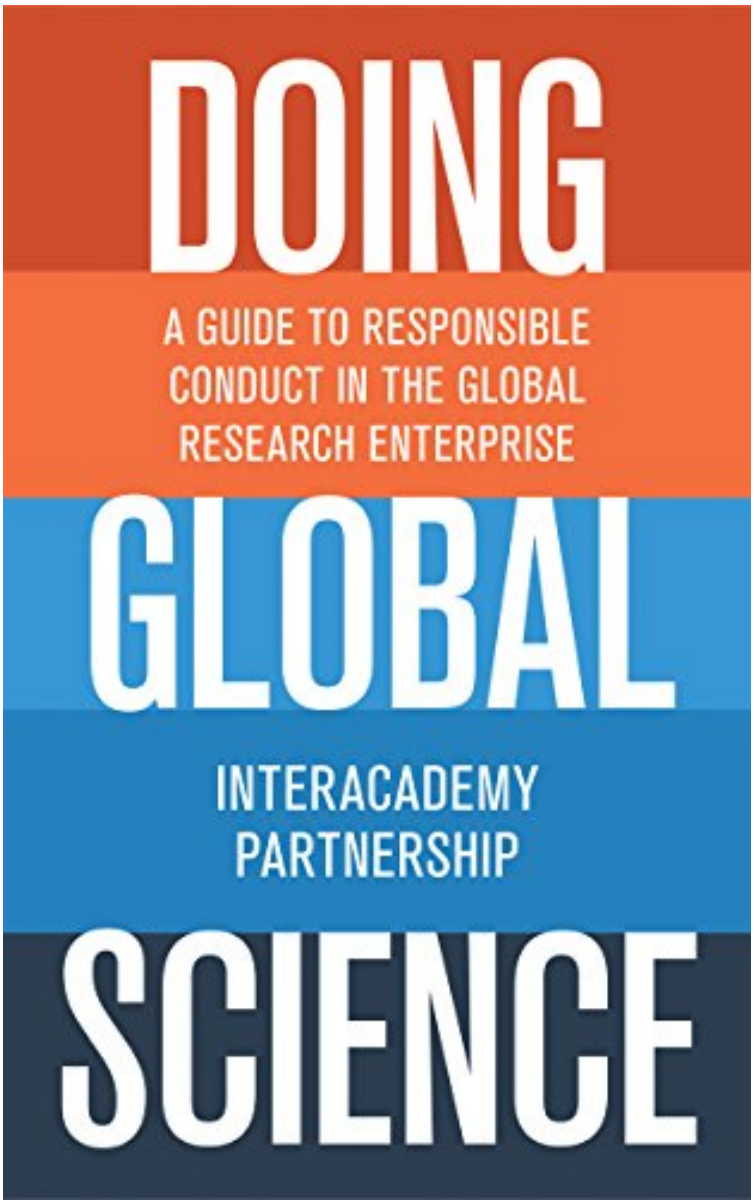

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InterAcademy Partnership : Doing Global Science: A Guide to Responsible Conduct in the Global Research Enterprise before purchasing it in order to gage whether or not it would be worth my time, and all praised Doing Global Science: A Guide to Responsible Conduct in the Global Research Enterprise:

1 of 1 people found the following review helpful. Pretty Good GuideBy John Richard Schrock: ldquo;Doing Global Science: A Guide to Responsible Conduct in the Global Research Enterpriserdquo; by InterAcademy Partnershipmdash;the Global Network of Science Academies; Princeton University Press; 162 pages, hardcover copy; 2016.The expansion of science research across a wider range of countries that have entered the developed world, as well as recent trends to evaluate and fund higher education based on research productivity, have resulted in an apparent increase in fraudulent science, plagiarism, fraudulent or predatory journals, misuse of bibliometrics, and efforts to train young scientists in ethical conduct of research in spite of the unknown efficacy of such training. As a self-monitoring enterprise, science does not lend itself to legalistic policing. Therefore, an understanding of the nature of honesty in science is important and this book addresses perhaps 80 percent of the problems of 2016 misconduct.It is a strength of this book that it has been compiled and reviewed by a Committee on Research Integrity consisting of leading scientists that extends worldwide. It was financially supported by the U.S. Department of State, the U.S. National Academy of Sciences and IAP for Science. Each chapter begins with an illustrated cartoon by Sydney Harris that is central to the chapter topic and contributes to the book.Chapter 1: Responsible Conduct of Research and the Global Context, and Overview The first pages do indeed provide an overview of the problems in scientific integrity, the ordering of the chapters, the use of focus boxes to illustrate issues and provide discussion scenarios. It notes that ldquo;prevention is better than curerdquo; which is certainly important insofar as once bad science is published, retractions are often missed and resulting wasteful research occurs. This book emphasizes ldquo;internationally harmonized standards in a rapidly changing global research environmentrdquo; but is not codified and there is insufficient scaffolding provided to develop such standards, if they are possible. You know you are reading good research or hearing a good presentation when the terms are carefully defined at the beginning, and that is indeed done in this book for: research; irresponsible conduct, practices, or behavior in research; misconduct and fraud; bias; conflict of interest; and principal investigator.Chapter 2. Planning and Preparing for Research The values of research are listed as: honesty, fairness, objectivity, reliability, skepticism, accountability and openness. Each is briefly defined. The importance of mentoring is described, and this student learning by a one-to-one relationship with a senior researcher is important. When the problem of whether we should give students classes in research ethics or whether we should cull bad apples, the role of the research mentor is sometimes missed in a false either-or scenario. This chapter also address plagiarism in discussing in bold: ldquo;researchers have a responsibility to acknowledge the source of ideas and provide credit when using othersrsquo; ideas.rdquo; This is aligned with the need to protect information learned through peer review of research proposals, etc. before public dissemination, usually by publication. This contains one of the rare discussions of the need for honesty in estimating the limitations of the research. While not every sentence makes reference to the literature, critical statements such as ldquo;review tends to be a conservative process and may be subject to biasrdquo; are cited with the full reference given in the references. Also unique to this book is the strong encouragement for, ldquo;where possible, research sponsors should use a broad range of reviewers, including international reviewers.rdquo;Chapter 3. Preventing the Misuse of Research and Technology Due to the continual development of new technologies, it is obvious that the development of guidelines will be a never-ending process. The problem of dual-use technology is explained. Boxes provide educational resources, and this short chapter raises more questions than answers.Chapter 4. Carrying Out Research In the short time this book has been available, the role of data storage has emerged and morphed in the publishing arena, with major publishers recognizing that data sharing is a money-making business too. The problem of openness in research data is complicated by constantly evolving technology, corporate concerns around patenting, level of author crediting, and problems in curating and preserving data on continuously-evolving platforms. Again, there is a discussion of manipulation of data for fraudulent ends, to cook or trim data, and failure to give the correct level of credit for data. One box in this section describes the Diederik Stapel case. Thankfully, this book correctly describes so-called ldquo;self-plagiarism,rdquo; better termed duplication in publishing.Chapter 5. The Researcherrsquo;s Responsibilities to Society Cold hard science could pose experiments that would be correct science, such as solving the problem of whether there is a discrete window for learning a language by having a series of children deprived of exposure to language for various time periods. Such a controlled experiment would answer the science question, but would result in severe damage to the lives of many of the experimental childrenmdash;I provide this example not from the book. Thus, the responsibility to society is a constraint on some research. The book does consider the case of embryonic stem cell research, which poses no clash with societal values in China, as an example of variable standards of cultural acceptance. In particular, the issue of informed consent varies among cultures and the extent the society trusts medical professionals. This becomes messy when there are international trials and the variation in science understanding and valuing of the research compromises any definition of informed consent. This discussion is extended to bioprospecting and biodiversity research. Specific regulations are discussed that on the surface seemed legitimate, but resulted in criminalizing bonafide research. Societies also vary in their citizenrsquo;s expectation of privacy. This chapter ends by broaching the controversies about dangers of lab and environmental safety posed by nanotechnology, genetically-modified crops, and lab safety.Chapter 6. Preventing and Addressing Irresponsible Practices Every teacher and researcher knows that it is easier to have rules than to enforce them, since we are all averse to confrontation.

Preventing irresponsible practice means education, and there is a recent uptick in requirements for some education or formal coursework in ethical science. But perception of enforcement is also part of the education, and if young researchers see misconduct being ignored, the educational efforts are undermined. Research is listed that shows about 2 percent of researchers admit to fabricating, falsifying or modifying results, and 14 percent have witnessed those behaviors among colleagues. Therefore, this book lays out responsibilities for the individual researcher, the research institution, research funders, governmental agencies, and professional associations. There is recognition that there can be difficulty for each of these agents.Chapter 7. Aligning Incentives with Responsible Research There is little doubt that there are conflicts of commitment caused by conflicts of interest of reviewers, institutions misusing bibliometrics, the rush-to-publish, and other factors. This chapter is far too short and ignores practices by academic institutions that are more concerned with the bottom-line and reputation than with good science.Chapter 8. Reporting Research Results It has been several decades since the Sigma Xi publication on ldquo;Honor in Sciencerdquo; suggested that the contributions of each author be listed in the acknowledgments. Some publications have adopted this, but many do not allocate responsibility among authors and merely have authors sign off on ldquo;no conflict of interest.rdquo; The problem of ldquo;ghost authorsrdquo; and honorary authors are briefly touched on, but the cultural history leading to these practices needs to be explained if it is to be curbed. There is also a brief discussion of traditional peer review and various proposals for open peer review and other methods. The treatment of ldquo;abuses of publication practicesrdquo; and ldquo;the role of journalsrdquo; does not begin to touch the problem of predatory journals and the permanence of archiving.Chapter 9. Benefits and Challenges of International Collaborations The unique aspect of this book is its focus on international research collaboration and the unique problems encountered when research is conducted by networks of principal investigators across political boundaries and worldwide. Satellite campuses provide the parent campus with automatic outreach in other cultures. And more and more, science problems such as climate change require international collaboration and have worldwide impact. Work across different languages and cultures risks miscommunication and the chapter ends with the need for global harmonization, but does not pursue an analysis of this problem.Chapter 10: Communicating with Policymakers and the Public The perception of science in the public eye is important in maintaining taxpayer and governmental support for big research. One box discusses the Lrsquo;Aqula Earthquake and the Italian prosecution of seismologists for failure to predict the earthquake. Another briefly poses the role of the IPCC operations in forecasting climate change and how to represent such reports to the public, and another probes the damage of bad science that resulted in a rise in anti-vaccination.Not covered: Research for military uses and funded by one government poses a specific problem and was well-discussed by Jacob Bronowski in 1977 in ldquo;The Disestablishment of Sciencerdquo; in his MIT collection of essays: A Sense of the Future. However, in the subsequent 40 years, big science research has become nearly totally dependent upon governmental funding, and it is nearly unthinkable to disconnect science funding from governmental agencies. Lacking a guaranteed archive, online open access ldquo;publishingrdquo; poses a threat to science in that research can be completely lost. The professional societies that rely on some revenue from print publications as well as their identity in print are also threatened by open access. There is no discussion of the economics of online publishing, where the cost of continual migration soon outpace the acid-free print publication. There is no recognition that some research is not funded by big government, and that the very real costs of publishing cannot be written into grants funding research in many areas, such as systematics.References: 27 pages of very pertinent references are provided on a chapter-by-chapter basis for those researchers who want to verify claims in the text and understand the issues at a deeper level.InterAcademy Partnership Committee on Research Integrity: A short roster of members and project staff followed by biographical sketches.Index: 14-page two-column index.

This concise introductory guide explains the values that should inform the responsible conduct of scientific research in today's global setting. Featuring accessible discussions and ample real-world scenarios, Doing Global Science covers proper conduct, fraud and bias, the researcher's responsibilities to society, communication with the public, and much more. The book places special emphasis on the international and highly networked environment in which modern research is done, presenting science as an enterprise that is being transformed by globalization, interdisciplinary research projects, team science, and information technologies.Accessibly written by an InterAcademy Partnership committee comprised of leading scientists from around the world, Doing Global Science is required reading for students, practitioners, and anyone concerned about the responsible conduct of science today.Provides practical guidance and instructions for doing scientific research in today's global settingCovers everything from responsible conduct to communication with the publicFeatures numerous real-world scenarios drawn from an array of disciplines and national contextsFocuses on issues commonly encountered in international collaborationsWritten by a panel of leading experts from around the worldAn essential guide for practicing scientists and anyone concerned about fostering research integrity

"The book highlights international efforts to set legal and ethical rules for the protection of human subjects. . . . [W]ill help younger generations keep their enthusiasm and values intact as they progress in their careers."--Elisabeth Pain,

Science"Clear, sober [and] well-referenced."--Karen Shook, Times Higher EducationFrom the Back Cover"Doing Global Science is a comprehensive code of conduct for scientific research, and a guide to responsible interactions by researchers with funding agencies, journals, policymakers, the public, and each other. In an interconnected world that is increasingly knowledge based and data driven, the plethora of resources and references in this book is invaluable to scientists and science communicators at all levels."--Maria Spiropulu, California Institute of Technology"Welcome and timely. Even for an old-style theoretician like myself with a romantic view of science as a totally free adventure, these guidelines are a ringing bell about numerous very real issues that we cannot ignore."--Carlo Rovelli, Aix-Marseille University"This unique book offers an international perspective on the difficulties and challenges of doing research."--Merav Opher, Boston University"I thoroughly enjoyed reading this concise and accessible book. Doing Global Science covers a broad range of topics and is full of relevant and extremely useful information."--Ralph R. Ristenbatt III, Pennsylvania State UniversityAbout the AuthorInterAcademy Partnership (IAP) is an umbrella organization formed by the merging of three established interacademy networks. The leadership of the new umbrella organization also includes representatives of four regional networks?in Africa, the Asia/Pacific region, Europe, and the Americas. IAP has 130 member academies, which together reach governments that represent 95 percent of the world's population.