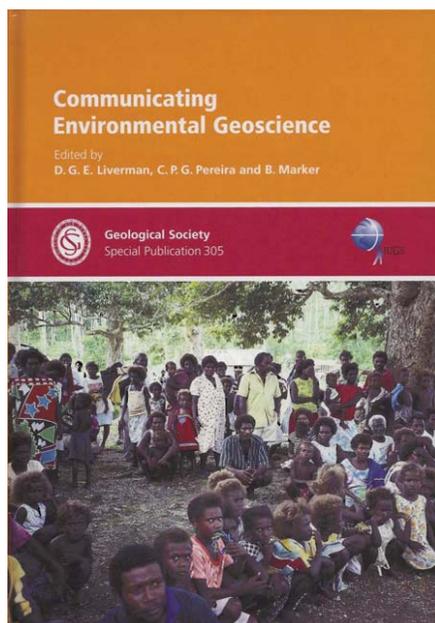


edited by Susan M Shirley



COMMUNICATING ENVIRONMENTAL GEOSCIENCE. D G E LIVERMAN, C P G PEREIRA, AND B MARKER, EDITORS. LONDON: GEOLOGICAL SOCIETY OF LONDON; 2008. 224 PAGES. HARDCOVER \$160.00. ISBN-13: 978-1-86239-260-1.

Many scientists have come to realize that “historical and scientific knowledge that has not been communicated to a broad public audience is little more than worthless.” This excerpt from *Communicating Environmental Geoscience* illustrates why this compilation of 17 papers is a timely addition to a geoscientist’s library of essential publications. The editors of the book have identified a weakness in the scientific process, assembled a collection of positive and negative examples, and offered solutions to improve geoscience communication.

Outreach of some sort is a basic component of most funded science-based research. However, scientists as a group are not known for being able to communicate well with the world outside the scientific community. Little in our training, personalities, or experiences qualifies us to “enlighten the broad public audience” with the knowledge gained from our scientific efforts. Yet this knowledge can be of great value to the management of resources, the planning of infrastructure, and the health and well-being of the public.

This book, written to address the communication of scientific information to the outside world, has a target audience of those who have developed or will develop geoscientific information. The inspiration for the book is a desire to define the role of scientists in public discourse and to define what scientists should and can do to bring the information developed through scientific research into the decision-making processes of policymakers and politicians. Although most of the authors are geoscientists adept at writing for scientific journals, writing about communicating scientific information to the public required most of the authors to deviate from their normal writing styles, with, as the editors note, varied levels of success.

The introductory chapter gives a brief description of the context of each paper. Some deal with phenomena such as volcanoes, mudslides, global climate change, and other geo-hazards; others discuss concepts of uncertainty as seen by scientists and the public; and still others detail why scientists

have difficulty talking to the mass media and how we can use innovative ways of visualization to aid in communication.

Several papers are anecdotal, describing successful projects and communication efforts. A success story, noted by Donnelly in “Communication in Geology”, was the public response to eruptions of Mount Pinatubo in 1990, when about 250,000 people were evacuated. Potentially thousands of lives were saved because of good communication among geologists, the authorities, and the population. Drastic failures are also noted with descriptions of the losses incurred. When the Nevado del Ruiz volcano erupted in Colombia in 1995, lahars and avalanches traveled more than 105 km in 4 hours and killed almost 25,000 people, injured 4,420, and left thousands homeless. In the months before that catastrophic event, geologists observed numerous signs of trouble and communicated their observations to government officials. Local authorities considered an evacuation but decided it was unwarranted. The information was met with skepticism and was never properly disseminated. Another chapter, written by Hermelin and Bedoya, begins with a description of a lahar in the same area, but 150 years earlier, that killed thousands and caused enormous destruction. A previous eruption of the same volcano was documented in 1595. The chain of events clearly demonstrates the lack of communication of historical and scientific knowledge to the public. Because of those tragedies, the Colombian National System for Disaster Prevention and Relief was created, and it is fostering important changes with the hope that future disasters will be averted. The concluding paper, by one of the editors, offers an editorial view of the compiled papers and insights into what scientists are doing right or wrong in communicating vital geoscientific information to policymakers, politicians, and the public.

Several of the papers in the book deal with climate change, an appropriate topic for many reasons: climate change is a subject on which scientists have experienced both successes and failures in reaching the vast number of policymakers and politicians,

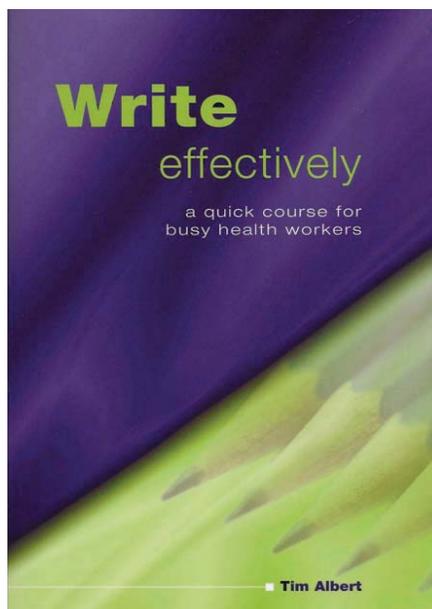
failure to successfully communicate the dangers of climate change will have global consequences, and those who dispute climate change have done well in their efforts to persuade at least some of the public that there is not a consensus on the subject in the scientific community. Boykoff, in “Media and Scientific Communication: A Case of Climate Change”, explores the role that the mass media have played in communicating information within and outside the scientific community. This paper is an example of the quality and depth of many articles in this compilation. After documenting the history of mass-media coverage and national and international policy highlights, Boykoff points out that the most evident increases in mass-media coverage and public attention came in 2005 and 2006, with high-profile events such as the Group of Eight Summit in Scotland and Hurricane Katrina on the Gulf Coast (2005), the release of *An Inconvenient Truth* by Al Gore, and the *Stern Review on the Economics of Climate Change*, by Nicholas Stern of the United Kingdom, on economic impacts and the costs of mitigation and adaptation in 2006. He further explores

the role of “climate contrarians” in amplifying uncertainties about climate change and includes well-referenced insights into corporate and government manipulation of climate-change information. Lastly, he points out that outreach through the mass media is a critical part of scientific research and that there are signs that improved communication is resulting in “better contextualization of the complexities” of scientific research. The paper reads well, is very informative, and is easy to follow.

This book is well written and includes a variety of styles and subjects that keep the reader engaged. It will be valuable not only to geoscientists but to scientists and students of most scientific disciplines.

John S Wood

JOHN S WOOD is a PhD candidate in the Coastal and Marine Systems Science Program at Texas A&M University–Corpus Christi and a fellow with the Harte Research Institute for Gulf of Mexico Studies. His specialty is the application of geographic information systems in the coastal environment.



WRITE EFFECTIVELY: A QUICK COURSE FOR BUSY HEALTH WORKERS. TIM ALBERT. OXFORD: RADCLIFFE PUBLISHING; 2008. 140 PAGES. PAPERBACK \$45.00. ISBN-13: 978-1-84619-135-0.

As pressure builds for people in the health-care industry to produce ever more written communications (from grant proposals to reports to e-mails), few find themselves prepared to undertake these writing assignments with confidence and skill. *Write Effectively: A Quick Course for Busy Health Workers*, by Tim Albert, is meant to help overcome the writing problems of not only new but more seasoned writers.

Albert began his professional life as a journalist who worked on local, national, and specialist health publications. Building on his experience in writing in the health field, he eventually conducted more than 1,000 courses on writing and editing skills for health-care professionals. That explains the basic workbook format of the book and why the chapters are called sessions. Just as in a workshop, the reader is taken through a series of exercises that should culminate in a well-written communication of the reader's choosing. As Albert explains in

the introduction, the book is divided into four sections. He recognized that he would be dealing with busy people, and the core of the book—the first section—is only 69 pages long.

The first session describes the daunting experience of writing and then explains how the book has been designed to help readers overcome their writing phobias (my word). As Albert explains, he's discovered through the years of giving courses in writing that the participants' “main problem was not writing simply, but writing anything at all.”

In Session 2, Albert asks readers to identify their real problem. He then offers a litany of problems commonly experienced by writers. They include the ubiquitous “I do not have enough time to write,” “I have too many ideas,” “I find it difficult to stop researching,” and “I tend to write too much.” In Session 3 Albert devotes a good deal of thought to the problem “I

do not know what is meant by ‘effective writing’.”

Session 4 gets more into the heart of writing by teaching about “the brief”, or “five essential elements of the writing task”. These are “the main points that you [the writer] wish to put across to the target reader.” One of the five essential elements, the message, should have three essential components: it must be single, have a verb, and be expressed in everyday language.

Sorting the information is the subject of Session 5, and here Albert takes an interesting departure from the norm. Rather than encouraging the preparation of an outline, he describes a spidergram, claiming “this technique can be done quickly and allows you to keep focused clearly on the message, yet at the same time is flexible.” A spidergram looks like an algorithm in which the central message forms the center of the diagram and all the subordinate and supporting points branch out from it. People who are accustomed to preparing even rough outlines as an important first step in organizing material for a writing project may see spidergrams as more painstaking. It is also possible to create a spidergram incorrectly, Albert warns. But for the novice writer, for whom an outline imposes a rigid linearity in the development of a writing idea, this may be a technique worth trying.

Session 6 focuses mainly on writing sentences and paragraphs and on the organization of paragraphs as a preliminary to Session 7, which is about writing the first rough draft. This is basic information on writing paragraphs. The one thing that I may take exception to is Albert’s claim that there do not need to be clear links between paragraphs “particularly since many people will be scanning the piece of writing rather than going through sentence by sentence.” That may be true, but I believe there need to be clear links between paragraphs because even during scanning, one paragraph should flow logically into the next. At the end of this session, Albert encourages writers to write a plan, which is essentially a rough outline of the topics to be covered.

Session 7 is titled “Writing the First Draft—And Enjoying It!” and it is here that the writer finally gets a chance to write. Albert encourages free writing—“you sit down with just your plan beside you, and you let rip. You start with the first sentence, and as soon as you have written that you continue with the second. Under no circumstances should you look back and start playing about with what you have already written.”

Session 8 is about rewriting and asking the questions: “Does your writing contain a clear *message*?” “Do you still want to put that message across to the target audience (*market*)?” “Is that message supported by the evidence?” “Is the *structure* appropriate for that audience?” “Is the *tone* appropriate for that audience?” Sessions 9 and 10 are about microediting and getting all the details right, including subjecting one’s writing to the criticism of others.

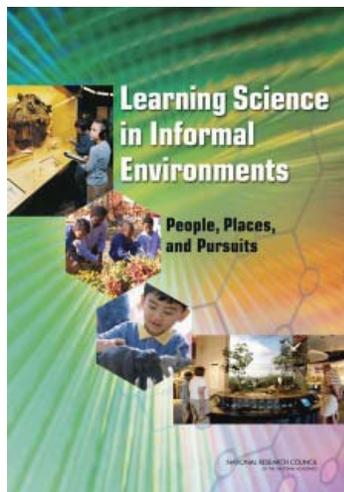
The second section of the book, “After Sales Service”, revisits the whole process of writing and especially the questions raised in Session 2 by having writers appraise their growth as writers as they’ve made their way through the book. The third section is “Some Points on Design”. The fourth section, “Lists for the Very Keen”, ranges from a biography to a list of parts of speech to a list of “Posh Words (And Their Less Pompous Equivalents)”.

This book nicely presents one very experienced writer’s well-tested approach to the task of writing and is certainly well worth a try for anyone who finds writing a tremendous labor. It may convert a reader’s perceived lack of skill into a very powerful tool.

Beth Notzon

BETH NOTZON is a program manager in division publications in the Division of Radiation Oncology at the University of Texas M D Anderson Cancer Center in Houston, Texas.

Book Note



LEARNING SCIENCE IN INFORMAL ENVIRONMENTS: PEOPLE, PLACES, AND PURSUITS. PHILIP BELL, BRUCE LEWENSTEIN, ANDREW W SHOUSE, AND MICHAEL A FEDER, EDITORS. COMMITTEE ON LEARNING SCIENCE IN INFORMAL ENVIRONMENTS, NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES. WASHINGTON, DC: NATIONAL ACADEMIES PRESS; 2009. 400 PAGES, HARDCOVER \$49.95. ISBN-13: 978-0-309-11955-9. (FREE ACCESS TO FULL TEXT AVAILABLE ONLINE AT BOOKS.NAP.EDU)

We know that apart from the classroom, we can learn science through the mass media. Museums and science cafés are also venues for learning science. But are there other informal environments of science learning? Is there evidence that informal environments promote science learning? The book *Learning Science in Informal Environments: People, Places, and Pursuits* provides answers.

The book resulted from the work of a committee established by the National Research Council. The committee consisted of 14 experts in science, media, psychology, and informal education. The book is a valuable resource for exhibit and program designers, educators, researchers, and science editors interested in promoting increased participation in informal science learning.

The authors have investigated the literature and discovered that goals of research

for school-based science learning and informal science learning are on different “trajectories”. They therefore argue for the need to have “common frameworks”. They also argue that informal science learning should be *life long* (age specific), *life wide* (place specific), and *life deep* (culture specific). The book advises educators, researchers, and leaders in informal education to provide more opportunities for publishing research on informal science learning in peer-reviewed journals, and it calls for providing incentives for non-academic authors to publish on the subject. From aquariums to zoos, infants to adults, and individuals to multicultural populations, the book provides recommendations for increasing informal science learning, evidence of the effectiveness of such learning, and directions for future research on the subject.

But if you are looking for the evidence of effectiveness of informal science learning worldwide, you will not be satisfied—the evidence is drawn mostly from the United States. Nevertheless, the book recognizes the important role that adaptation to different cultures plays in informal science learning.

Bernard Appiah

BERNARD APPIAH, a graduate student in science and technology journalism at Texas A&M University, wrote this book note while a Science Editor intern.

Book Alert

Briefly described below are some recent books of possible interest to editors and authors in the sciences. Inclusion of a title should not be construed as a recommendation. Books in this list may be candidates for reviews or book notes in *Science Editor*. Prospective reviewers of these or other books are invited to contact Susan M Shirley, book-review editor, at teehbr1@hotmail.com.

MY WORD! PLAGIARISM AND COLLEGE CULTURE. SUSAN D BLUM. ITHACA, NY: CORNELL UNIVERSITY PRESS; 2009. 240 PAGES. HARDCOVER \$24.95. ISBN-13: 978-0-8014-4763-1.

Academe today is a dichotomous culture in which professors view plagiarism as a serious crime and ethical transgression whereas students “revel in sharing, multiplicity, and accomplishment at any cost.” The author relies on interviews of students by students to explore that difference and whether it helps to explain the apparent epidemic of plagiarism in American colleges.

READING THE OED: ONE MAN, ONE YEAR, 21,730 PAGES. AMMON SHEA. NEW YORK: PERIGEE BOOKS; 2008. 240 PAGES. HARDCOVER \$21.95. ISBN-13: 978-0-399-53398-3.

Shea spent a year reading the *Oxford English Dictionary* word for word and cover to cover “so you don’t have to.” This is his humorous account of the more than 21,000-page record of our language and its oddities and gems.

SCIENCE ON THE AIR: POPULARIZERS AND PERSONALITIES ON RADIO AND EARLY TELEVISION. MARCEL CHOTKOWSKI LAFOLLETTE. CHICAGO: UNIVERSITY OF CHICAGO PRESS; 2008. 324 PAGES. HARDCOVER \$27.50. ISBN-13: 978-0-226-46759-7.

Science popularizers, precursors of *Bill Nye the Science Guy*, hit the radio airwaves in the early 1920s. Their broadcasts offered an opportunity to educate; but through their choice of topic, content, and tone, they morphed serious science into generally understandable and interesting radio entertainment. The lessons learned from the popularizers’ effects on public reception of science in the early 20th century are relevant to today’s science communicators.

WRITE LIKE A CHEMIST: A GUIDE AND RESOURCE. MARIN S ROBINSON, FREDRICKA L STOLLER, MOLLY COSTANZA-ROBINSON, AND JAMES K JONES. NEW YORK: OXFORD UNIVERSITY PRESS; 2008. 720 PAGES. PAPERBACK \$49.95. ISBN-13: 978-0-19-530507-4.

This new guide to chemistry writing, sponsored by the National Science Foundation, is one of the few chemistry-specific writing books on the market. It teaches chemists (students and professionals) to write through exercises, and its content is designed specifically for journal articles, conference abstracts, scientific posters, and research proposals.

New Editions

AMA MANUAL OF STYLE: A GUIDE FOR AUTHORS AND EDITORS [INTERNET]. 10TH ED. OXFORD UNIVERSITY PRESS AND JAMA & ARCHIVES JOURNALS, AMERICAN MEDICAL ASSOCIATION; 2009. [CITED 18 MAY 2009]. AVAILABLE FROM (SUBSCRIPTION REQUIRED): WWW.AMAMANUALOFSTYLE.COM//OSO/PUBLIC/INDEX.HTML

The new online format of this reference standard makes it searchable and allows the publisher to correct and update its print edition. Users will be able to annotate and bookmark their online manuals, prepare style sheets, and save searches.

FROM RESEARCH TO MANUSCRIPT: A GUIDE TO SCIENTIFIC WRITING. 2ND ED. MICHAEL JAY KATZ. NEW YORK: SPRINGER; 2009. 210 PAGES. PAPERBACK \$19.95. ISBN-13: 978-1-4020-9466-8.

This guide focuses on understanding and summarizing a research project by learning how to write each section of a scientific paper. The second edition includes more examples, advice on publishing in online journals, software suggestions, and updated references.

UNITS, SYMBOLS, AND ABBREVIATIONS: A GUIDE FOR AUTHORS AND EDITORS IN MEDICINE AND RELATED SCIENCES. 6TH ED. D N BARON AND H MCKENZIE CLARKE, EDITORS. LONDON: ROYAL SOCIETY OF MEDICINE PRESS; 2008. 56 PAGES. PAPERBACK \$17.50. ISBN-13: 978-1-85315-624-3.

This book was intended to be a portable reference on basic units, symbols, and abbreviations for scientific authors and editors in the medical field in the UK. The new edition includes updated sections on metrication and SI units, symbols and nomenclature, layout of references, proof correction, and the use of electronic media for processing medical information.