

Contents

Preface xv

A Word to International Readers xix

Acknowledgments xxi

PART I: SOME PRELIMINARIES

- 1 *What Is Scientific Writing?* 3**
 - The Scope of Scientific Writing 3
 - The Need for Clarity 3
 - Receiving the Signals 4
 - Understanding the Signals 4
 - Understanding the Context 4
 - Organization and Language in Scientific Writing 5

- 2 *Historical Perspectives* 6**
 - The Early History 6
 - The Electronic Era 7
 - The IMRAD Story 8

- 3 *Approaching a Writing Project* 11**
 - Establishing the Mindset 11
 - Preparing to Write 12

- Doing the Writing 14
- Revising Your Work 16

- 4 ***What Is a Scientific Paper?*** 18
 - Definition of a Scientific Paper 18
 - Organization of a Scientific Paper 20
 - Shape of a Scientific Paper 22
 - Other Definitions 22

- 5 ***Ethics in Scientific Publishing*** 24
 - Ethics as a Foundation 24
 - Authenticity and Accuracy 24
 - Originality 25
 - Credit 26
 - Ethical Treatment of Humans and Animals 27
 - Disclosure of Conflicts of Interest 28

- 6 ***Where to Submit Your Manuscript*** 29
 - Why Decide Early, Why Decide Well 29
 - Prestige and Impact 31
 - Access 34
 - Avoiding Predatory Journals 34
 - Other Factors to Consider 35
 - Using Instructions to Authors 36

PART II: PREPARING THE TEXT

- 7 ***How to Prepare the Title*** 41
 - Importance of the Title 41
 - Length of the Title 42
 - Need for Specific Titles 42
 - Importance of Syntax 43
 - The Title as a Label 44
 - Abbreviations and Jargon 45
 - More About Title Format 45

- 8 ***How to List the Authors and Addresses*** 47
 - The Order of the Names 47
 - Definition of Authorship 49

- Defining the Order: An Example 50
- Specifying Contributions 51
- Proper and Consistent Form 51
- Listing the Addresses 52
- A Solution: ORCID 53
- Purposes of the Addresses 54

- 9 ***How to Prepare the Abstract*** 55
 - Definition 55
 - Types of Abstracts 57
 - Economy of Words 59
 - Akin to Abstracts 60

- 10 ***How to Write the Introduction*** 61
 - Guidelines 61
 - Reasons for the Guidelines 62
 - Exceptions 63
 - Citations and Abbreviations 65

- 11 ***How to Write the Materials and Methods Section*** 66
 - Purpose of the Section 66
 - Materials 67
 - Methods 68
 - Headings 68
 - Measurements and Analysis 68
 - Need for References 69
 - Tables and Figures 69
 - Correct Form and Grammar 70

- 12 ***How to Write the Results*** 72
 - Content of the Results 72
 - How to Handle Numbers 73
 - Strive for Clarity 73
 - Avoid Redundancy 74
 - A Supplement on Supplementary Material Online 74

- 13 ***How to Write the Discussion*** 75
 - Discussion and Verbiage 75
 - Components of the Discussion 76
 - Factual Relationships 76

- Noting Strengths and Limitations 77
- Significance of the Paper 78
- Defining Scientific Truth 78

- 14 *How to State the Acknowledgments* 80
 - Ingredients of the Acknowledgments 80
 - Being Courteous 80

- 15 *How to Cite the References* 82
 - Rules to Follow 82
 - Electronic Aids to Citation 83
 - Citations in the Text 83
 - Reference Styles 84
 - Name and Year System* 85
 - Alphabet-Number System* 85
 - Citation Order System* 86
 - Titles and Inclusive Pages 87
 - Journal Abbreviations 87
 - Some Trends in Reference Format 88
 - Examples of Different Reference Styles 88
 - Citing Electronic Material 89
 - One More Reason to Cite Carefully 89

PART III: PREPARING THE TABLES AND FIGURES

- 16 *How to Design Effective Tables* 93
 - When to Use Tables 93
 - How to Arrange Tabular Material 96
 - Exponents in Table Headings 99
 - Following the Journal's Instructions 99
 - Titles, Footnotes, and Abbreviations 100
 - Additional Tips on Tables 100

- 17 *How to Prepare Effective Graphs* 101
 - When Not to Use Graphs 101
 - When to Use Graphs 103
 - How to Prepare Graphs 104
 - Symbols and Legends 106
 - A Few More Tips on Graphs 107

- 18 ***How to Prepare Effective Photographs*** 108
 Photographs and Micrographs 108
 Submission Formats 108
 Cropping 109
 Necessary Keys and Guides 109
 Color 111
 Line Drawings 113

PART IV: PUBLISHING THE PAPER

- 19 ***Rights and Permissions*** 117
 What Is Copyright? 117
 Copyright Considerations 118
 Copyright and Electronic Publishing 119
- 20 ***How to Submit the Manuscript*** 121
 Checking Your Manuscript 121
 Submitting Your Manuscript 122
 The Cover Letter 122
 Sample Cover Letter 124
 Electronic Cover Letters 125
 Confirmation of Receipt 125
- 21 ***The Review Process (How to Deal with Editors)*** 126
 Functions of Editors, Managing Editors, and
 Manuscript Editors 126
 The Review Process 128
 The Editor's Decision 132
 The Accept Letter 133
 The Modify Letter 133
 The Reject Letter 136
 Editors as Gatekeepers 138
- 22 ***The Publishing Process (How to Deal with Proofs)—
 and After Publication*** 140
 The Copyediting and Proofing Processes 140
 Why Proofs Are Sent to Authors 141
 Misspelled Words 141
 Marking the Corrections 143

- Additions to the Proofs 143
- Addition of References 145
- Proofing the Illustrations 145
- When to Complain 146
- Reprints 146
- Publicizing and Archiving Your Paper 147
- Celebrating Publication 149

PART V: DOING OTHER WRITING FOR PUBLICATION

- 23 ***How to Write a Review Paper*** 153
 - Characteristics of a Review Paper 153
 - Preparing an Outline 154
 - Types of Reviews 155
 - Writing for the Audience 156
 - Importance of Introductory Paragraphs 157
 - Importance of Conclusions 157

- 24 ***How to Write Opinion (Letters to the Editor, Editorials, and Book Reviews)*** 158
 - Writing Informed Opinion 158
 - Letters to the Editor 158
 - Editorials 159
 - Book (and Other Media) Reviews 160

- 25 ***How to Write a Book Chapter or a Book*** 162
 - How to Write a Book Chapter 162
 - Why (or Why Not) to Write a Book 163
 - How to Find a Publisher 163
 - How to Prepare a Book Manuscript 165
 - How to Participate in the Publication Process 166
 - How to Help Market Your Book 168

- 26 ***How to Write for the Public*** 170
 - Why Write for General Readerships? 170
 - Finding Publication Venues 170
 - Engaging the Audience 172
 - Conveying Content Clearly 173
 - Emulating the Best 174

PART VI: CONFERENCE COMMUNICATIONS

- 27 *How to Present a Paper Orally* 177
 How to Get to Present a Paper 177
 A Word of Caution 178
 Organization of the Paper 178
 Presentation of the Paper 179
 Slides 180
 The Audience 181
 A Few Answers on Questions 182
- 28 *How to Prepare a Poster* 183
 Popularity of Posters 183
 Organization 184
 Preparing the Poster 185
 Presenting the Poster 187
- 29 *How to Write a Conference Report* 188
 Definition 188
 Format 189
 Presenting the New Ideas 190
 Editing and Publishing 190

PART VII: SCIENTIFIC STYLE

- 30 *Use and Misuse of English* 195
 Keep It Simple 195
 Dangling Modifiers 196
 The Ten Commandments of Good Writing 197
 Metaphorically Speaking 198
 Misuse of Words 198
 Tense in Scientific Writing 200
 Active versus Passive Voice 202
 Euphemisms 202
 Singulars and Plurals 203
 Noun Problems 204
 Numbers 205
 Odds and Ends 205

- 31 ***Avoiding Jargon*** 208
Definition of Jargon 208
Mumblespeak and Other Sins 208
Mottoes to Live By 210
Bureaucratese 210
Special Cases 212
- 32 ***How and When to Use Abbreviations*** 214
General Principles 214
Good Practice 215
Units of Measurement 216
Special Problems 216
SI (Système International) Units 217
Other Abbreviations 217
- 33 ***Writing Clearly across Cultures and Media*** 218
Readable Writing 218
Consistency in Wording 220
Serving International Readers 220
A Few Words on Email Style 221
Writing for Online Reading 222
- 34 ***How to Write Science in English as a Foreign Language*** 223
English as the International Language of Science 223
The Essentials: Content, Organization, and Clarity 224
Cultural Differences to Consider 225
Some Common Language Challenges 226
More Strategies for English-Language Writing 227
More Resources 228

PART VIII: OTHER TOPICS IN SCIENTIFIC COMMUNICATION

- 35 ***How to Write a Thesis*** 231
Purpose of the Thesis 231
Tips on Writing 233
When to Write the Thesis 234
Relationship to the Outside World 235
From Thesis to Publication 236

- 36 ***How to Prepare a Curriculum Vitae, Cover Letter, and Personal Statement*** 237
- What's a CV? What's It Good For? 237
 - What to Put In (and What to Leave Out) 239
 - Other Suggestions 239
 - Preparing a Cover Letter 240
 - Writing a Personal Statement 241
- 37 ***How to Prepare Grant Proposals and Progress Reports*** 243
- Preparing a Grant Proposal 243
 - Identifying Potential Sources of Funding* 244
 - Preliminary Letters and Proposals* 244
 - Common Parts of a Proposal* 245
 - Preparing to Write the Proposal* 246
 - Writing the Proposal* 246
 - Common Reasons for Rejection* 249
 - Other Problems to Watch For* 249
 - Resubmitting a Proposal* 250
 - Two Closing Comments* 251
 - Writing a Progress Report 251
 - Basic Structure* 251
 - Some Suggestions* 252
- 38 ***How to Write a Recommendation Letter—and How to Ask for One*** 254
- Deciding Whether to Write the Letter 254
 - Gathering the Information 255
 - Writing the Letter(s) 255
 - A Light Aside 256
 - If You're Seeking Recommendation Letters 257
- 39 ***How to Work with the Media*** 258
- Before the Interview 258
 - During the Interview 260
 - After the Interview 261
- 40 ***How to Provide Peer Review*** 263
- Responding to a Request for Peer Review 263
 - Peer Reviewing a Scientific Paper 264
 - Providing Informal Peer Review 266

41 ***How to Edit Your Own Work*** 269

Preparing to Edit Your Work 269

Items to Notice: 8 Cs 270

A Good Choice: Checklists 271

Finding and Working with an Author's Editor 272

42 ***How to Seek a Scientific-Communication Career*** 276

Career Options in Scientific Communication 276

An Admittedly Unvalidated Quiz 277

Career Preparation 278

Entering the Field and Keeping Up 279

Appendix 1: Selected Journal Title Word Abbreviations 281

Appendix 2: Words and Expressions to Avoid 285

Appendix 3: SI (Système International) Prefixes and Their Abbreviations 293

Appendix 4: Some Helpful Websites 295

Glossary 297

References 303

Index 311