

A close-up photograph of a woman with dark hair, wearing a blue button-down shirt under a dark jacket. She is gesturing with her right hand, palm facing forward, as if speaking or presenting. The background is a soft, out-of-focus blue.

SECOND
EDITION

SCIENTISTS MUST SPEAK

D. ERIC WALTERS
GALE C. WALTERS



CRC Press
Taylor & Francis Group

SECOND EDITION

SCIENTISTS
MUST SPEAK

SECOND EDITION

SCIENTISTS MUST SPEAK

D. ERIC WALTERS GALE C. WALTERS



CRC Press

Taylor & Francis Group

Boca Raton London New York

CRC Press is an imprint of the
Taylor & Francis Group, an **informa** business

CRC Press
Taylor & Francis Group
6000 Broken Sound Parkway NW, Suite 300
Boca Raton, FL 33487-2742

© 2011 by Taylor and Francis Group, LLC
CRC Press is an imprint of Taylor & Francis Group, an Informa business

No claim to original U.S. Government works

Printed in the United States of America on acid-free paper
10 9 8 7 6 5 4 3 2 1

International Standard Book Number-13: 978-1-4398-2604-1 (Ebook-PDF)

This book contains information obtained from authentic and highly regarded sources. Reasonable efforts have been made to publish reliable data and information, but the author and publisher cannot assume responsibility for the validity of all materials or the consequences of their use. The authors and publishers have attempted to trace the copyright holders of all material reproduced in this publication and apologize to copyright holders if permission to publish in this form has not been obtained. If any copyright material has not been acknowledged please write and let us know so we may rectify in any future reprint.

Except as permitted under U.S. Copyright Law, no part of this book may be reprinted, reproduced, transmitted, or utilized in any form by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying, microfilming, and recording, or in any information storage or retrieval system, without written permission from the publishers.

For permission to photocopy or use material electronically from this work, please access www.copyright.com (<http://www.copyright.com/>) or contact the Copyright Clearance Center, Inc. (CCC), 222 Rosewood Drive, Danvers, MA 01923, 978-750-8400. CCC is a not-for-profit organization that provides licenses and registration for a variety of users. For organizations that have been granted a photocopy license by the CCC, a separate system of payment has been arranged.

Trademark Notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Visit the Taylor & Francis Web site at
<http://www.taylorandfrancis.com>

and the CRC Press Web site at
<http://www.crcpress.com>

Contents

<i>Preface</i>	xiii
<i>Introduction</i>	xv
<i>It begins with attitude!</i>	<i>xv</i>
<i>Why does it matter?</i>	<i>xv</i>
<i>When do I need these skills?</i>	<i>xvi</i>
<i>How can I improve?</i>	<i>xvii</i>
<i>What will this book do for me?</i>	<i>xviii</i>
<i>Some key messages from the introduction</i>	<i>xviii</i>

PART I

Preparation 1

1 Target your talk 3

<i>Introduction</i>	3
<i>Who is your audience?</i>	4
<i>What brings them together?</i>	4
<i>Ask questions about the audience in advance</i>	5
<i>How technical is this audience?</i>	5
<i>What does the audience want from this presentation?</i>	6
<i>What do you want to accomplish?</i>	7
<i>Learn from the experts</i>	8
<i>How can you meet your listeners' needs and accomplish your goals?</i>	9
<i>A brief, dynamic introduction to your presentation</i>	10
<i>Your regard for the audience</i>	10
<i>Your obvious enthusiasm for the topic</i>	11

Emphasis on significant conclusions 11
Words that reach every person in the audience 12
Minimize details about techniques and methods 13
*A succinct, clear summary and reiteration
of the take-home message* 14
Allow 5 to 10 minutes for questions 15
Summary 15
Exercises 16

2 Organize your presentation 19

Introduction 19
Five formulas for structuring the presentation 19
*Introduction–body–conclusion formula...
or tell, tell, tell* 19
The introduction 20
The body 21
The conclusion 23
Transitions 24
Four other formulas for organizing your presentation 25
Question and answer 25
AIDA 25
Borden’s ho-hum method 26
The motivated sequence 27
Collecting, arranging, and focusing your ideas 28
Outlining 29
Mind mapping 30
Start at the end and work backward 32
Storyboards 34
Revising and refining your talk 34
Flow 35
Zing 36
Timing 37
Summary 38
Some key messages from this chapter 39
Exercises 39

3 Visual aids	41
<i>Introduction</i>	41
<i>What should and should not be in a visual aid</i>	41
<i>Types of visual aids</i>	42
<i>Advantages and disadvantages</i>	
<i>of different kinds of visual aids</i>	43
<i>Projection technologies</i>	43
<i>Write as you go</i>	46
<i>Models or products</i>	47
<i>Handouts</i>	48
<i>Designing and preparing visual aids</i>	49
<i>Presentation software makes it easy—too easy?</i>	49
<i>Layout</i>	50
<i>Using text on your visual aids</i>	51
<i>Graphs and drawings</i>	51
<i>Special effects</i>	54
<i>Using visual aids</i>	55
<i>Summary</i>	57
<i>Some key messages from this chapter</i>	58
<i>Exercise</i>	58
4 Practice, practice, practice	59
<i>Introduction</i>	59
<i>Let the words flow</i>	59
<i>Watch your timing</i>	61
<i>What about notes?</i>	61
<i>Get feedback</i>	62
<i>Integrate your visual aids</i>	63
<i>Get comfortable with your setting</i>	64
<i>And now for something really scary...</i>	64
<i>Summary</i>	65
<i>Some key messages from this chapter</i>	65
<i>Exercises</i>	65
<i>Speaker evaluation guidelines and checklist</i>	66

PART II

Delivery 67

5 Take control of the situation 69

Introduction 69

Before you start talking 70

Check the room setup 70

Talk to the people who arrive early 70

*Take a few moments for mental preparation
and relaxation* 71

Have your opening sentences firmly in mind 71

As you begin talking 71

Have we been introduced? 72

What should they expect from you? 73

What do you expect from them? 73

Throughout your presentation 73

Attitude 73

Make eye contact 74

Watch the time 76

Give a strong ending and then stop talking 76

Summary 76

Some key messages from this chapter 77

Exercise 77

6 Voice and language 79

Introduction 79

Voice 79

Volume 79

Pacing 81

Vocal variety 82

Language 84

Choice of words 84

Pronunciation 86

Back to Babel 86

*Language issues—you are not speaking
your native language* 87

*Language issues—members of your audience
are not native speakers of your language* 88

<i>Summary</i>	89
<i>Some key messages from this chapter</i>	89
<i>Exercises</i>	89
7 Body language and gestures	91
<i>Introduction</i>	91
<i>First impressions</i>	91
<i>The importance of nonverbal communication</i>	92
<i>Facial expression</i>	92
<i>Posture</i>	93
<i>What to do with hands and arms</i>	94
<i>More ways to be interesting to watch!</i>	95
<i>Summary</i>	95
<i>Some key messages from this chapter</i>	96
<i>Exercise</i>	96
8 Handling question-and-answer sessions	97
<i>Introduction</i>	97
<i>Tell everyone what the rules are</i>	97
<i>How to handle questions</i>	98
<i>How to handle hostile questions and questioners</i>	100
<i>Think about your audience</i>	102
<i>Summary</i>	102
<i>Some key messages from this chapter</i>	103
<i>Exercise</i>	103
PART III	
Special situations	105
9 When the unexpected happens	107
<i>Introduction</i>	107
<i>Extemporaneous speaking</i>	107
<i>When the extemporaneous situation strikes</i>	107
<i>Can you practice for an extemporaneous talk?</i>	108
<i>The job interview as an extemporaneous situation</i>	109

When crisis strikes 110
 Stay calm 110
 Plan ahead 110
 Deal with the situation as directly as possible 111
Summary 111
Some key messages from this chapter 111
Exercise 112

10 Adapting material from one situation to another 113

Introduction 113
What has changed? 113
Adapting written material to an oral presentation 114
Adapting a talk from one audience to another 115
Adapting a long presentation to a shorter one 118
Summary 118
Some key messages from this chapter 119
Exercises 119
Adapting material: a checklist 119

11 Organizing a program with several speakers 121

Introduction 121
Coordinating the messages 121
Choosing the speakers 122
 How many? 122
 Symposium program 122
 Technical sales program 122
 Departmental seminar program 123
 Organization 123
Chairing a program 125
 In preparation 125
 How to introduce a speaker 125
 Running the show 126
 After the show is over 127
Summary 128

Some key messages from this chapter 128

Exercise 128

Concluding remarks 129

The speaker's bookshelf 130

Index 133

Preface

Eight years have passed since the publication of the first edition of *Scientists Must Speak*. We are delighted that so many have found our book useful, and we want to make sure that the book continues to be relevant. The most dramatic change over the last 8 years has been in presentation software and computer projection. What was once a risky endeavor, beset with glitches and incompatibilities, has become quite routine. It has also produced more options to consider when preparing a presentation and more details to which to attend. In light of this development, Chapter 3 has been completely rewritten.

The reason for the book's existence remains the same. In face-to-face discussions, scientists and other technical people invariably radiate fascination and excitement about their subject matter, but that enthusiasm often fails to come out in formal oral presentation. We passionately believe that the cutting-edge science, discoveries, and breakthroughs that will shape our future should never produce deadly serious recitations when presented to an audience.

Most of the books about oral presentation skills are aimed squarely at business and salespeople. Even those few books targeted toward scientific presentation sometimes seem a little too subdued. We want to show you how to present your technical subject matter in a way that not only projects your scientific credibility and rigor but also shares with your listener the passion you feel for your work.

Introduction

IT BEGINS WITH ATTITUDE!

Why are so many technical presentations so dull? There are several reasons. When you speak on a scientific or technical subject, your presentations must be precise. The data, equations, graphs, chemical structures, diagrams, blueprints, or formulas that might be necessary to support your key points must be accurate. The presentation must cover material that a lay audience might consider esoteric. You will have to use words that are not part of everyday conversation.

As a professional, you want your listeners to take you seriously. Does this mean that your talk is destined to be boring and lifeless? Absolutely not! Presumably, there is a reason why you are interested in the topic to be discussed. Why did you choose to study this subject? Why did you work on this project for the last 3 years? Something about the topic got you interested and excited. The key is for you, the speaker, to convey that excitement to your listeners. *If you can get your listeners to feel the same enthusiasm that you do about your subject, your presentation will come to life!*

WHY DOES IT MATTER?

In your scientific or technical career, you probably spend only a small percentage of your time in formal speaking situations. However, these situations can have a tremendous impact on your career. If you speak well, you enhance your credibility. If you communicate clearly, you increase your visibility within your organization and in the larger professional community. Good presentation skills can show others why your work is important or exciting.