

MANAGING SCIENTISTS

Leadership Strategies in Scientific Research

Second Edition

ALICE M. SAPIENZA

*School for Health Studies
Simmons College
Boston, Massachusetts*

 **WILEY-LISS**

A JOHN WILEY & SONS, INC., PUBLICATION

MANAGING SCIENTISTS

Second Edition

MANAGING SCIENTISTS

Leadership Strategies in Scientific Research

Second Edition

ALICE M. SAPIENZA

*School for Health Studies
Simmons College
Boston, Massachusetts*

 **WILEY-LISS**

A JOHN WILEY & SONS, INC., PUBLICATION

This book is printed on acid-free paper. ☺

Copyright © 2004 by Wiley-Liss, Inc., Hoboken, New Jersey. All rights reserved.

Published simultaneously in Canada.

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 750-4744. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, E-Mail: PERMREQ @ WILEY.COM.

For ordering and customer service information please call 1-800-CALL-WILEY.

Library of Congress Cataloging-in-Publication Data:

Sapienza, Alice M.

Managing scientists : leadership strategies in scientific research /

Alice M. Sapienza. — 2nd ed.

p. cm.

ISBN 0-471-22614-9 (cloth)

1. Research—Management. 2. Scientists—Relations. 3. Organizational behavior. 4. Management. I. Title.

Q180.55.M3 S27 2004

658.57—dc22

2003025317

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

Dedicated to VS

CONTENTS

Preface to the Second Edition	ix
Acknowledgments	xiii
1 Introduction	1
2 Condition of Being Different	19
3 Understanding What Motivates You and What Motivates Others	37
4 Understanding Your Leadership Style and That of Others	70
5 Communicating Effectively	88
6 Dealing with Conflict	124
7 Creativity: Influence of Structure, Size, and Formal Systems	145
8 Project Management	167
9 Discerning and Assessing Organizational Culture	196
10 Leading Change	222
Index	241

PREFACE TO THE SECOND EDITION

BACKGROUND

A second edition benefits reader and author in several ways. Errors and/or omissions can be addressed; content can be updated and modified; arguments can be strengthened; new facts can be marshaled. Changes in the environment can be accounted for.

When I was asked by Wiley if I was interested in producing a second edition of *Managing Scientists*, I was eager to do so, for the reasons given above. A second edition provides a focused opportunity for reflecting on what the author has learned since the first edition was published. But, I was happily unaware of how long I would need to complete this edition—because I have learned so much more about the subject in the intervening years.

I have learned, for example, that the consequences of managing scientists poorly are even worse than I had considered. In Chapter 1, I present results of expert panel surveys that I and a colleague collected between 1996 and 1999, from scientists, postdocs, technicians, and physician researchers. They were asked to describe the worst example of leadership they had observed or experienced as well as the best. I am sure many readers will not be surprised by the candid depictions of laboratories in turmoil because the leader could not handle conflict, or verbally abused the staff, or simply was not present.

Postdocs, I have learned, are a particularly vulnerable population. They are sometimes asked to work under circumstances that would not be tolerated in the “real world” (i.e., companies). They are also facing the prospect of having to lead a staff of their own, either without systematic training or (as examples of the worst leaders suggest) without a good role model to observe.

I have learned how difficult it still is for women scientists in academia and in industry. Scientific institutions are not free from bias and stereotyping. Gender remains an important issue, in terms of the visibility, presumed competence, inclusion (in meaningful task forces and committees), and parity of promotion and remuneration of women scientists. In one firm to which I consulted, women scientists who tried to develop a support and mentoring network were upbraided by their managers for being seditious. Difficulties also face others not in the majority. One non-U.S. male scientist told me that his colleagues assumed he “thought with an accent” (in other words, stumblingly and haltingly) because he spoke English with an accent.

I have learned, because scientists told me about their experience, that poor leadership results almost invariably in poor productivity and a lack of creativity. I learned how few are the examples of successful institutional change and how often the fate of an organization rests on the knife-edge of personal insight, or active listening, or effective communication.

As a professor of management, I am convinced that formal management education is incredibly helpful to anyone who wants to lead effectively. Good courses in organizational behavior can, I believe, often make the difference between a satisfactorily run laboratory and a superbly creative laboratory. I am also convinced that the journey from occupying a managerial/leadership role to being an effective leader sometimes begins with a book. I began my formal management training, in part, because I happened to read Peter Drucker’s 1954 classic text, *The Practice of Management* (this has been reissued in paperback by Harper Business Books). I hope that this small book can provide you with even a fraction of the inspiration his books provided me.

CONTENTS

Clearly, numerous general books on management and leadership are available. Simply view the choices under the keywords *management* and *leadership* in online bookstores. However, there is no book focused specifically on

helping those scientists who find themselves leading other scientists and technical personnel. This book attempts to provide help as follows:

- Chapter 1 (Introduction) is a new chapter and contains the rationale for such a book: survey data on scientists' own experience of leadership. Major themes emerging from the data and verbatim comments from the surveys are interwoven throughout the rest of the text.
- Chapter 2 (Condition of Being Different) is also a new chapter. It provides a broad perspective on diversity and a narrow discussion of the challenges with which women scientists must deal. Both the heterogeneity of the current science workforce and the real gender discrimination that occurs are examined from the vantage of what leaders face.
- Chapter 3 (Understanding What Motivates You and What Motivates Others) is an expanded version of the second chapter in the first edition. I now include more material on motivation theory, new projective instruments, and new analyses of the case study from some of my clinical graduate students.
- Chapter 4 (Understanding Your Leadership Style and That of Others) is also an expanded version of what was the third chapter in the first edition, with new material on leadership theory.
- Chapter 5 (Communicating Effectively) is an enlarged and modified version of the former sixth chapter. I have included gender schemas in communication as well as new analyses of the case study (also from my best clinical graduate students).
- Chapter 6 (Dealing with Conflict) adds, to what was originally the seventh chapter, material on dealing with power differences, which emerged as important sources of conflict in asymmetric relationships such as postdoc and Principal Investigator (PI), junior and senior faculty, and so forth.
- Chapter 7 (Creativity: Influence of Structure, Size, and Formal Systems) draws on a number of additional studies of creative groups. I also include, in what was formerly the fifth chapter, a new section on the importance of tacit knowledge and how it can be captured in the laboratory.
- Chapter 8 (Project Management) benefits from work I conducted for

The National Aeronautics and Space Administration (NASA) on the roles and competencies of project scientists. This is an enlarged version of the eighth chapter in the first edition.

- Chapter 9 (Discerning and Assessing Organizational Culture) contains two additional case examples (only one was included in the former fourth chapter) of culture. These came from my consulting experience and represent, as do all the cases, real organizations and real people (disguised, of course).
- Chapter 10 (Leading Change) includes more material on theory than the former ninth chapter and an update on the case example. In the years since the first edition, one of the case examples in Chapter 8 disappeared (was acquired) and the one in Chapter 10 showed remarkable improvements.

ACKNOWLEDGMENTS

Because this is a second edition, I remain indebted to those who inspired and supported me in the first edition. In addition, I want to thank Carl Cohen (colleague and collaborator in the first rounds of expert panel surveys); Richard Corder (a graduate student who provided the major analyses of the survey data); Stacey Blake-Beard (for an illuminating review of the second chapter); Diana Stork (whose collaboration has been influential throughout many of the chapters); Joseph Lombarino (also a special supporter of the first edition); the scientists who took the time to respond to our surveys; the postdocs of the University of California (who helped me understand the particular challenges of this position); and my graduate students, whose wonderful analyses of the case studies in this book can now be shared with a larger audience. Finally, I want to give a special thanks to my editor at Wiley, Luna Han, for her support and, above all, her patience.