

**Responsible Conduct in Chemistry
Research and Practice: Global
Perspectives**



Library of Congress Cataloging-in-Publication Data

Names: Tratras Contis, Ellene, editor. | Phillips, Dorothy (Dorothy J.), editor. | Campbell, Allison (Allison A.), editor. | Miller, Bradley D., editor. | Brown, Lori, 1985- editor.
Title: Responsible conduct in chemistry research and practice : global perspectives / [edited by] Ellene Tratras Contis (Eastern Michigan University, Ypsilanti, Michigan), Dorothy J. Phillips (Waters Corporation (retired), Milford, Massachusetts), Allison A. Campbell (Pacific Northwest National Laboratory, Richland, Washington), Bradley D. Miller (American Chemical Society, Washington, DC), Lori Brown (American Chemical Society, Washington, DC).
Description: Washington, DC : American Chemical Society, [2018] | Series: ACS symposium series ; 1288 | Includes bibliographical references and index.
Identifiers: LCCN 2018038282 (print) | LCCN 2018047270 (ebook) | ISBN 9780841233065 (ebook) | ISBN 9780841233072 (hardcover OP) | ISBN 9781713889304 (pod)
Subjects: LCSH: Chemistry--Social aspects--Congresses. | Chemistry--Moral and ethical aspects--Congresses. | Chemistry--Research--Moral and ethical aspects--Congresses. | Chemists--Professional ethics--Congresses. | Responsibility--Congresses.
Classification: LCC QD39.7 (ebook) | LCC QD39.7 .R47 2018 (print) | DDC 174.954--dc23
LC record available at <https://lccn.loc.gov/2018038282>

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

Copyright © 2018 American Chemical Society

Distributed in print by Oxford University Press

All Rights Reserved. Reprographic copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Act is allowed for internal use only, provided that a per-chapter fee of \$40.25 plus \$0.75 per page is paid to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA. Republication or reproduction for sale of pages in this book is permitted only under license from ACS. Direct these and other permission requests to ACS Copyright Office, Publications Division, 1155 16th Street, N.W., Washington, DC 20036.

The citation of trade names and/or names of manufacturers in this publication is not to be construed as an endorsement or as approval by ACS of the commercial products or services referenced herein; nor should the mere reference herein to any drawing, specification, chemical process, or other data be regarded as a license or as a conveyance of any right or permission to the holder, reader, or any other person or corporation, to manufacture, reproduce, use, or sell any patented invention or copyrighted work that may in any way be related thereto. Registered names, trademarks, etc., used in this publication, even without specific indication thereof, are not to be considered unprotected by law.

PRINTED IN THE UNITED STATES OF AMERICA

Contents

Preface	ix
---------------	----

Global Efforts in Chemical Safety and Security

1. Chemical Disarmament in a Technologically Evolving World	3
Jonathan E. Forman and Christopher M. Timperley	
2. Chemical Issues in Context: The Role of Intent in Nonproliferation & Disarmament	37
Kabrena E. Rodda	
3. Emerging Chemical and Biological Technologies: Security & Policy Challenges	51
Margaret E. Kosal	
4. Education and Outreach: Key Elements To Promote the Responsible and Peaceful Uses of Chemistry	69
R. A. Spanevello and A. G. Suárez	
5. Finding Better Therapeutics for Chemical Poisonings	83
Shardell M. Spriggs, Houmam Araj, Hung Tseng, and David A. Jett	
6. Chemical Safety and Security Challenges in Academic Institutions in Developing Countries	97
Ahmed F. A. Youssef	

Ethics, Human Rights, and the Chemical Sciences

7. Exemplary Science and Human Rights Initiatives at ACS	109
Dorothy J. Phillips, Lori Brown, and Bradley D. Miller	
8. The Global Chemists' Code of Ethics: International Cooperation for Increased Chemical Security and Safety	129
Lori Brown	
9. Scientific Societies for Human Rights: The American Chemical Society's Role in the AAAS Science and Human Rights Coalition	139
Theresa L. Harris and Jessica M. Wyndham	

10. Chemists Contributing to Human Rights: Enhancing Research, Teaching and Global Impact	149
Jeffrey H. Toney	

Responsible Conduct and Challenges in Chemistry

11. Responsible Conduct in Chemical Safety and Security Practices in South Asia	157
Ellene Tratras Contis, Uzma Ashiq, Shazma Massey, Sammia Shahid, and Amita Verma	
12. Responsible Conduct in Chemical Safety and Security Practices and Its Development in Malaysia	171
H. L. Lee, M. F. Abdul-Wahab, C. T. Goh, and D. M. Chau	
13. Responsible Conduct of Research and Challenges in the Middle East	191
Abeer Al Bawab	
14. Research in Africa: Responsible Conduct in Research Reporting and Challenges	203
Berhanu M. Abegaz	
15. Responsible Conduct and Challenges in North Africa	215
Mama El Rhazi and Majda Breida	
16. Responsible Conduct of Chemical Sciences Research and Challenges in Nigeria and West Africa	223
Eucharua O. Nwaichi	
17. Responsible Conduct and Challenges in East Africa	239
Dickson Andala	
Editors' Biographies	251

Indexes

Author Index	255
Subject Index	257