

**Engaging Chemistry Students with Real-World
Context: Volume 1**

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. | ISBN 9781713888734 (pod)

Copyright © 2023 American Chemical Society

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

1. Incorporating Real-World Context in Chemistry Courses: A Way to Facilitate Meaningful Learning	1
Gail H. Webster	
2. Generating Individualized Organic Chemistry Exams from a Collection of Reaction Examples from the Literature	7
Dennis Cao	
3. Integrating Computational Methods and Molecular Visualization Tools in Undergraduate Chemistry Education	15
Bharat Dhital	
4. Problem-Solving Our Way to a Sustainable Future: An Organic Chemistry I Literature Research Project Based on the U.N. Sustainable Development Goals	27
Rebecca E. Black	
5. Ethics Assignments in Graduate Biochemistry Course	59
Niina Ronkainen	
6. Making the Invisible Visible: Using Agar Art and Color to Reveal the Complexity of the Unseen World	71
Latisha R. Jefferies, J. Jordan Steel, Erin A. Almand, and Andrea N. Giordano	
7. Effect of a Chemistry Case Study on Students' Understanding of Chemical Bonds	83
Katie McShea and Deana Jaber	
8. Enhancing Chemistry Relevance in a General Chemistry Lecture Course through Real-World Contexts and Application Cards Activities	99
S. M. Ifat Hossain Sristy, Yolanda Vasquez, and Jacinta M. Mutambuki	
Editors' Biographies	115
Indexes	
Author Index	119
Subject Index	121