Inclusive STEM Transforming Disciplinary Writing Instruction for a Socially Just Future



Edited by Heather M. Falconer and LaKeisha McClary

Inclusive STEM Transforming Disciplinary Writing Instruction for a Socially Just Future

Across the Disciplines Books

Series Editor: Michael A. Pemberton Associate Editor: Kathryn M. Northcut

The Across the Disciplines Books series is closely tied to published themed issues of the online, open-access, peer-reviewed journal *Across the Disciplines*. In keeping with the editorial mission of *Across the Disciplines*, books in the series are devoted to language, learning, academic writing, and writing pedagogy in all their intellectual, political, social, and technological complexity.

The WAC Clearinghouse and University Press of Colorado are collaborating so that these books will be widely available through free digital distribution and low-cost print editions. The publishers and the series editors are committed to the principle that knowledge should freely circulate and have embraced the use of technology to support open access to scholarly work.

Other Books in This Series

Jonathan Hall and Bruce Horner (Eds.), *Toward a Transnational University: WAC/* WID Across Borders of Language, Nation, and Discipline (2023)

Marilee Brooks-Gillies, Elena G. Garcia, Soo Hyon Kim, Katie Manthey, and Trixie G. Smith (Eds.), *Graduate Writing Across the Disciplines: Identifying, Teaching, and Supporting* (2020)

Steven J. Corbett, Jennifer Lin LeMesurier, Teagan E. Decker, and Betsy Cooper (Eds.). Writing In and About the Performing and Visual Arts: Creating, Performing, and Teaching (2019).

Alice S. Horning, Deborah-Lee Gollnitz, and Cynthia R. Haller (Eds.). *What is College Reading?* (2017)

Frankie Condon and Vershawn Ashanti Young (Eds.), *Performing Antiracist Pedagogy in Rhetoric, Writing, and Communication* (2017)

Inclusive STEM Transforming Disciplinary Writing Instruction for a Socially Just Future

Edited by Heather M. Falconer and LaKeisha McClary

The WAC Clearinghouse wac.colostate.edu Fort Collins, Colorado

University Press of Colorado upcolorado.com Denver, Colorado The WAC Clearinghouse, Fort Collins, Colorado 80523

University Press of Colorado, Denver, Colorado 80202

Copyright © 2024 by Heather M. Falconer and LaKeisha McClary. This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.

ISBN: 978-1-64215-236-4 (PDF) | 978-1-64215-237-1 (ePub) | 978-1-64642-687-4 (pbk.) DOI: 10.37514/ATD-B.2024.2364

Produced in the United States of America

Library of Congress Cataloging-in-Publication Data

Pending

Copyeditor: Samantha Maloney Book Design: Mike Palmquist Cover Art and Design: Raw Pixel Image 13225061. Licensed. Series Design: Tara Reeser Series Editor: Michael A. Pemberton Series Associate Editor: Kathryn M. Northcut

The WAC Clearinghouse supports teachers of writing across the disciplines. Hosted by Colorado State University, it brings together scholarly journals and book series as well as resources for teachers who use writing in their courses. This book is available in digital formats for free download at wac.colostate.edu.

Founded in 1965, the University Press of Colorado is a nonprofit cooperative publishing enterprise supported, in part, by Adams State University, Colorado State University, Fort Lewis College, Metropolitan State University of Denver, University of Alaska Fairbanks, University of Colorado, University of Denver, University of Northern Colorado, University of Wyoming, Utah State University, and Western Colorado University. For more information, visit upcolorado.com.

Citation Information: Falconer, Heather M., & LaKeisha McClary. (2024). Inclusive STEM: Transforming Disciplinary Writing Instruction for a Socially Just Future. The WAC Clearinghouse; University Press of Colorado. https://doi.org/10.37514/ATD-B.2024.2364

Land Acknowledgment. The Colorado State University Land Acknowledgment can be found at https://landacknowledgment.colostate.edu.

Contents

3	Introduction
	Heather M. Falconer

Section 1. Disrupting the Status Quo

- 19 Student Vignette Dhatri Badri
- 21 Student Vignette Riya Sharma
- 23 STEM Writing as Disruption: Views from First Year Writing Jameta Nicole Barlow and Kylie E. Quave
- The Inclusive Potential of Teaching the History of (White Mainstream)
 English as the International Language of Science
 Elizabeth Blomstedt
- 59 "Science has always been about asking questions": Critical Science Literacy in STEM Writing Megan Callow and Holly Shelton
- 83 Integrating Social Justice Data and Scaffolded Writing with Universal Design Principles Into Introductory Statistics
 Laura Kyser Callis
- A Curriculum Exploring Arab and Muslim Science: Opening Space for Other Epistemologies of Science
 Alicia Bitler and Ebtissam Oraby
- 123 Creating Assignments that Put Programmatic Inclusion and Diversity Work into Practice
 Justiss Wilder Burry, Carolyn Gubala, Jessica Griffith Tanya Zarlengo, and Lisa Melonçon

Section 2. Challenging Orientations to Instruction and Assessment

149	Student Vignette
	Madison Brown

- 151 Student Vignette Madeline Dougherty
- Promoting Inclusion Through Participation in and Construction of Engineering Judgments
 Rachel C. Riedner, Royce A. Francis, and Marie C. Paretti
- 173 Engineering an Inclusive Integrated Writing Course Jennifer C. Mallette
- Putting Science in Black and White: Intensive Technical Writing Through Non-disposable Assignments as a Path for Decolonizing STEM
 Sally B. Seraphin
- 223 Exploring Ungrading in a Biochemistry Laboratory Course Jennifer Newell-Caito
- A Call to Action for More Inclusive STEM
 Janelle M. Johnson, Kimberlee Bourelle, Adrian Clifton, Mary Coleman, Parker Edingfield, Amanda Myers, Madeline Onstott, Joseph
 Schneiderwind, and Katie Weaver
- Teaching Neuroethics in a Time of Crisis: Lessons in Liberatory
 Pedagogy
 Ann E. Fink
- 285 Conclusion: Lessons from the Front Lines LaKeisha McClary and Heather Falconer
- 309 Contributors