
CLINICAL LABORATORY SCIENCE

FALL 2014

Volume 27/Number 4

Focus: Fundamentals of Clinical Laboratory Sciences Research



JOURNAL OF THE AMERICAN SOCIETY FOR CLINICAL LABORATORY SCIENCE

ASCLS Mission/Vision Statement

The American Society for Clinical Laboratory Science serves as the voice of all clinical laboratory professionals, creating a vision for the advancement of the clinical laboratory practice field, and advocating the value and role of the profession ensuring safe, effective, efficient, equitable, and patient centered healthcare.



AMERICAN SOCIETY FOR CLINICAL LABORATORY SCIENCE

1861 International Drive, Suite 200
McLean, VA 22102
(571) 748-3770
www.ascls.org

ASCLS Core Values

Core Values include enhancing quality standards and patient safety; providing professional development opportunities; promoting expanded roles and contributions of clinical laboratory professionals to the healthcare team; increasing the diversity in the profession; and expanding the voice and role of under-represented individuals and groups.

ASCLS MEMBER EDITORS

Editor-in-Chief

Susan Leclair, PhD
Chancellor Professor
Department of Medical Laboratory Science
University of Massachusetts Dartmouth
285 Old Westport Road
Dartmouth, MA 02747-2300
508-999-8786
sleclair@umassd.edu

Continuing Education Editor

Suzanne Campbell, PhD, MLS(ASCP)^{CM}
STEM Project Director
Medical Laboratory Technician Program
Coordinator
Seward County Community College/Area
Technical School
P.O. Box 1137
Liberal, KS 67901
suzanne.campbell@sccc.edu

Clinical Practice Editor

Perry Scanlan, PhD, MT(ASCP)
Medical Laboratory Science
Austin Peay State University
Department of Allied Health Sciences
Room D212, Sundquist Science Complex
Box 4668
Clarksville TN 37044
perryscanlan@gmail.com

Research and Reports Editor

Maribeth L. Flaws, PhD, SM(ASCP)SI
Associate Chairman and Associate Professor
Department of Medical Laboratory Science
Rush University Medical Center
600 S Paulina Suite 1018A
Chicago IL 60612
Maribeth_L_Flaws@rush.edu

Education Editor

Elizabeth Kenimer Leibach, EdD, MS,
MLS(ASCP)^{CM}SBB^{CM}
Professor Emeritus
Departments of Biomedical and Radiological
Technologies and Pathology
Georgia Regents University, EC 2437
Augusta, GA 30912
eleibach@comcast.net

Clinical Laboratory Science (ISSN 0894-959X) is indexed in PubMed and published quarterly by the American Society for Clinical Laboratory Science, 1861 International Drive, Suite 200, McLean, VA 22102; (571) 748-3770.

Annual Subscription Rates:

	USA	Canada	Non-USA
Individuals	\$75	\$90	\$140
Institutions	\$90	\$90	\$140

Questions related to subscriptions should be addressed to: ascls@ascls.org. The cost of single copies is \$16. Requests to replace missing issues free of charge are honored up to six months after the date of issue. Send requests to ASCLS headquarters. Annual membership dues of ASCLS are \$99, \$40 of which is allocated to a subscription of CLS. Periodical postage paid at Bethesda, MD and other additional mailing offices.

Consulting Editor Coordinator

Mary Ann McLane, PhD, MLS(ASCP)
Professor, Medical Laboratory Sciences
University of Delaware
Medical Laboratory Sciences
305G Willard Hall Educ Bld
Newark, DE 19716
302-831-8737
mclane@udel.edu

Consulting Editors

Hassan Aziz, Doha, Qatar
George Fritsma, Birmingham, AL
Peter Hu/Houston TX
Deborah Josko/Newark NJ
Don Lehman, Newark, DE
Carol McCoy/Edmond, OK
David McGlasson/Lackland AFB, TX
Isaac Montoya/Houston TX
Rodney Rohde/San Marcos TX
Patricia Tille, Brookings, SD

REVIEW BOARD

Dianne Cearlock/DeKalb IL
Peter Colaninno/Jamaica NY
Maria Delost/Youngstown OH
Jo Ann Fenn/Salt Lake City UT
Ellis Frohman/St Louis MO
Mildred Fuller/Norfolk VA
Abraham Furman/Portland OR
Linda Gorman/Lexington, KY
Denise Harmening/Baltimore MD
Rita Heuertz/St Louis MO
Linda Hogan/Wichita KS
Virginia Hughes/St. George UT
Elaine Keohane/Newark NJ
Nancy Konopka/Gettysburg PA
Robin Krefetz/Cherry Hill NJ
Linda Laatsch/Milwaukee WI
Cecelia Landin/Milwaukee WI
Kristen Landis-Pinowar/Rochester MI
Hal Larsen/Lubbock TX
Sandra Latshaw/Omaha NE
Rebecca Laudicina/Chapel Hill NC
Marcia Lee/Oxford OH
Patrick Lennon/Nashville TN
Connie Mahon/Washington DC
Karen McClure/Houston TX
Nicholas Moore/Chicago IL
Mary Muslow/Ruston LA
Harriette Nadler/King of Prussia PA

Advertising for CLS is accepted in accordance with the advertising policy of the ASCLS. Contact the CLS advertising representative at (571) 748-3770.

Manuscript Submissions: To encourage consistency in style, refer to guidelines in Scientific Style and Format – The Council of Science Editors Manual for Authors, Editors, and Publishers, 2006.

Detailed instructions for authors are available on the ASCLS web site. Contact the CLS Editorial Office for more information.

All articles published represent the opinions of the authors and do not reflect the official policy of ASCLS or the authors' institutions unless specified.

Microfilm and microfiche editions of CLS are available from Proquest, 300 N Zeeb Road, Ann Arbor MI 48106.

Joan Prince/Milwaukee WI
Margaret Reinhart/Philadelphia PA
Kyle Riding/Medford MA
Kristy Shanahan/N Chicago IL
Masih Shokrani/Dekalb IL
Linda Smith/San Antonio TX
Stephen Sodeke/Tuskegee AL
Donna Spannus-Martin/Minneapolis MN
Susan Stalewski, Madison WI
James Vossler/Syracuse NY
Kathy Waller/Columbus OH
Mara Williams/Santa Clara CA
Lori Woeste/Normal IL

P.A.C.E.® Liaison

Andrea Hickey/Washington DC

ASCLS BOARD OF DIRECTORS 2014-2015

Susanne (Susie) Zanto, President
Barbara Snyderman, President-elect
J. R. Constance, Past President
Cindy Johnson, Secretary/Treasurer
Maddie Josephs, Region I
Nadine Fydrzyzewski, Region II
Evelyn Weaver, Region III
Roslyn McQueen, Region IV
Debra Rodahl, Region V
Suzanne Campbell, Region VI
Karen Chandler, Region VII
Joni Gilstrap, Region VIII
Shannon Billings, Region IX
Sally Pestana, Region X
Crystal Mino, First Year Professional Chair
Elizabeth Ezeb, Student Forum Chair

ASCLS Headquarters Executive Staff

Elissa Passiment, Executive Vice President

EDITORIAL OFFICE AND PRODUCTION

Westminster Publishers
315 Westminster Court
Brandon, MS 39047
(601) 214-5028
westminsterpublishers@comcast.net

Executive Editor

David Fowler PhD

Managing Editor

Myra Fowler MT(ASCP)

Inclusion in the journal of product names or author opinions does not constitute endorsement by either Clinical Laboratory Science or ASCLS.

Correspondence related to editorial content should be mailed to:

Westminster Publishers
315 Westminster Court
Brandon, MS 39047
(601) 214-5028

Email: westminsterpublishers@comcast.net

ADDRESS CHANGES

Postmaster: Send address changes to Clinical Laboratory Science 1861 International Drive, Suite 200, McLean, VA 22102

© Copyright 2014 American Society for Clinical Laboratory Science Inc. All rights reserved.