

Natural Sciences Education

A cross-disciplinary journal on animal and natural sciences pedagogy



ISSN 2168-8281

Business & Editorial Offices: 5585 Guilford Road, Madison, WI 53711

Published by the American Society of Agronomy

Journal Cooperators include the following societies: American Society of Animal Science, Agricultural & Applied Economics Association, American Association for Agricultural Education, American Institute of Biological Sciences, American Phytopathological Society, American Society for Horticultural Science, American Society of Plant Biologists, Crop Science Society of America, Ecological Society of America, Entomological Society of America, Soil Science Society of America

NATURAL SCIENCES EDUCATION Editorial Board

Elizabeth Guertal, ASA Editor-in-Chief, Auburn University (guertea@auburn.edu)
Ken Barbarick, Editor, Colorado State University (ken.barbarick@colostate.edu)

ASSOCIATE EDITORS

STEPHEN CESSNA
*Eastern Mennonite University Harrisonburg, VA
K-12 Education, Biology, Chemistry*

LAURA DEETER
*Ohio State University ATI, Wooster
Horticulture*

STEVEN GREEN
*Arkansas State University
Soil Science*

REBECCA JORDAN
*Rutgers University
Ecology, Natural Resources, Model-Based Learning*

RUPESH RAM KARIYAT
RAMACHANDRAN
*ETH, Zurich, Switzerland
Entomology, Web-Based Learning, Outreach*

MAJA KRZIC
*University of British Columbia, Canada
Applied Biology, Soil Science, Forestry/
Forest Soils*

KRISTI LEKIES
*The Ohio State University
Rural Sociology, K-12 Education*

GARRETT LILES
*Chico State University, Chico, CA
Soil Science, Natural Resource Management,
Soil Quality, Science Communication*

CYNTHIA MCKENNEY
*Texas Tech University
Horticulture, Native Plants,
Water Conservation, Greenhouse Crops*

LYNSEY PETERSON
*A Pass Educational Group, LLC
K-12 Education, Biology, Ecology, Botany*

RAKSHA SINGH
University of Arkansas

MARY SAVIN
*University of Arkansas
Soil Science*

MARY WIEDENHOEFT
*Iowa State University
Sustainable Agriculture, Alternative
Cropping Systems, Agronomic Education*

ASSOCIATE EDITORS, COOPERATING SOCIETIES

DEBRA K. AARON
*University of Kentucky
American Society of Animal Science*

DOUGLAS RICHMOND
*Purdue University
Entomological Society of America*

JUSTIN RICKARD
*Illinois State University
American Society of Animal Science*

Science Communications Editor

KEN BARBARICK
Colorado State University

Soils Multimedia Associate Editor

MARY SAVIN
University of Arkansas

HEADQUARTERS STAFF

Publications Director
Bill Cook (bcook@sciencesocieties.org)
Managing Editor
Susan Ernst (sernst@sciencesocieties.org)
Submissions Manager
Lauren Van Driel (lvandriel@sciencesocieties.org)

2018 OFFICERS OF ASA

President
S. Evett, USDA-ARS, Amarillo, TX
Past President
J.G. DAVIS, Colorado State University, Fort Collins, CO
President-Elect
G. Pierzynski, Kansas State University, Manhattan, KS
Chief Executive Officer
ELLEN G.M. BERGFELD, ASA Headquarters, Madison, WI