About Our Cover

The cover image shows part of a flock of at least 150 cedar waxwings (Bombycilla cedrorum) eating the fruit of the cockspur hawthorn (Crataegus crusgalli) on the campus of the College of Lake County in Gurnee, IL. As you can see from the image, the trees were full of berries when they started. The birds completely stripped all three trees in less than a week and moved on for the rest of the fall and winter. They have the amusing trait of passing berries or even apple blossoms from one bird to the next down a long row sitting on a branch until one bird eats the food. Cedar waxwings tend to form flocks in the winter months in areas with significant amounts of berries. Their range is across most of the United States except the very dry deserts of the West, and they winter as far south as Central America. Although their diet is omnivorous, cedar waxwings are one of the few songbirds in the United States that can survive on only fruit for months at a time. According to the Cornell Ornithology Lab, the young of the brown-headed cowbird (a brood parasite that normally lays eggs in the nests of other birds) often die in cedar waxwing nests because they can’t survive the high-fruit diet. The photograph was taken on a cold day, using a Canon 50D with a 100–400 zoom by Bob Remedi, Associate Professor of Biology at College of Lake County (e-mail: remedi@clcillinois.edu). This image and caption won first prize in the recent ABT cover photo contest.

The Next Generation of Science Standards: Implications for Biology Education
What is next for national biology standards?
Rodger W. Bybee

Issue-Oriented Science: Using Socioscientific Issues to Engage Biology Students
Issues and controversies provide learning motivation in biology
Laura Lenz, Maia K. Willcox

Assessment of an ELISA Laboratory Exercise
ELISAs are used in myriad ways in diverse fields like biotechnology, medicine, agriculture, and environmental science
David L. Robinson, Joann M. Lau

Micro-eukaryote Diversity in Freshwater Ponds
That Harbor the Amphibian Pathogen
Batrachochytrium dendrobatidis (Bd)
Detecting and mitigating a fungal pathogen responsible for decline of amphibians worldwide
Anjje Lauer, Lonnie McConnel, Navdeep Singh

A (1)-(2)-(3) Jumpstart Approach to Answer an Open-Ended Question
Improving your students’ writing-process skills
Anthony V. DeFina

Plant Reproduction & the Pollen Tube Journey – How the Females Lure the Males
Visualizing the journey of pollen tubes in the reproductive structure of a flowering plant
Rene Lorbiecke

Modeling Protein Structure & Function: Pencil Transferase
Modeling with pipe cleaners to understand protein structure
Jeanne Ting Chowning, Dina Kovari, Joan Griswold

The Harry Potter Box: Demonstrating the Importance of Challenging Assumptions during the Scientific Process
An activity that stresses the value of the unexpected
Sumana Setty, Melissa S. Kosinski-Collins