

Table of Contents

FEATURES

From the National Academies

Understanding Interventions that Encourage Minorities to Pursue Research Careers: Major Questions and Appropriate Methods

Adam P. Fagen and Jay B. Labov187–189

Point of View: Textbooks—Essential or Superfluous?

Teaching without a Textbook: Strategies to Focus Learning on Fundamental Concepts and Scientific Process

M. W. Klymkowsky190–193

Book Review

Living with History

Mark E. Borrello194–195

LETTER TO THE EDITOR

Make Microarray Data with Known Ratios

A. Malcolm Campbell, William T. Hatfield, and Laurie J. Heyer196–197

ESSAY

High School Biology Today: What the Committee of Ten Actually Said

Keith Sheppard and Dennis M. Robbins198–202

ARTICLES

Supplemental Instruction in Introductory Biology I: Enhancing the Performance and Retention of Underrepresented Minority Students

Kenneth A. Rath, Alan R. Peterfreund, Samuel P. Xenos, Frank Bayliss, and Nancy Carnal203–216

The Value of Animations in Biology Teaching: A Study of Long-Term Memory Retention

Danton H. O'Day217–223

Characterization of Human Genetics Courses for Nonbiology Majors in U.S. Colleges and Universities

Bethany Vice Bowling, Carl A. Huether, and Jennifer A. Wagner224–232

Graduate Experience in Science Education: The Development of a Science Education Course for Biomedical Science Graduate Students

Dina G. Markowitz and Michael J. DuPré233–242

Increased Learning Observed in Redesigned Introductory Biology Course that Employed Web-enhanced, Interactive Pedagogy

Carl N. McDaniel, Bradford C. Lister, Michael H. Hanna, and Harry Roy243–249

A goal of CBE—Life Sciences Education is to stimulate dialogue; therefore, readers are invited to submit comments on these articles through Letters to the Editor at <http://www.lifescied.org>.

On the Cover

The cover animation, supplied with a popular cell biology text,¹ schematically illustrates the processes of condensation and nuclear fragmentation through phagocytosis during the programmed death (apoptosis) of a eukaryotic cell. Animations are now commonly supplied on CDs packaged with textbooks and are used widely in the teaching of molecular processes and other complex biological phenomena. But are they more effective as learning tools than the static color images in the books? In an article on p. 217 of this issue, O'Day compares student retention of concepts after instruction using either animations or static graphics derived from them.

¹ From *Molecular Cell Biology* 4.0, CD-ROM distributed with *Molecular Cell Biology*, Lodish, H., et al., W. H. Freeman and Co., New York, NY, 4th Edition (2000). Used with permission.