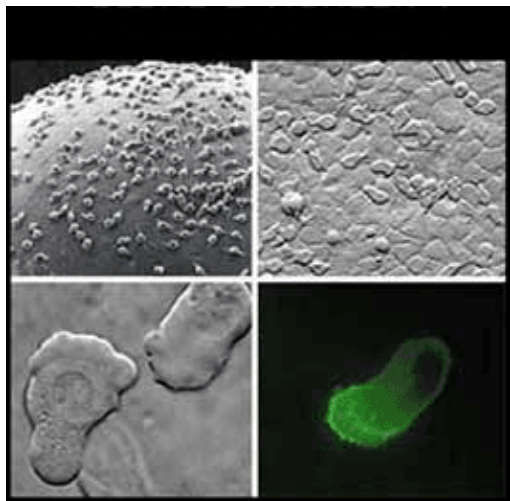


## Volume 2 Spring Issue



### Table of Contents

Use Arrows to Browse  
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## FEATURES

- **Approaches to Cell Biology Teaching: Cooperative Learning in the Science Classroom—Beyond Students Working in Groups**  
by Kimberly Tanner, Liesl S. Chatman, and Deborah Allen
- **WWW.Cell Biology Education**  
by Robert Blystone
- **Review of: *Molecular Biology of the Cell*, 4th ed., by B. Alberts, A. Johnson, et al**  
**Well Worth the Weight!**  
by Jean E. Schwarzbauer
- **Review of: *Enjoy Your Cells Series* by Fran Balkwill and Mic Rolph**  
**Cell and Molecular Biology for Minors**  
by Rebecca L. Smith and Ruby Lipscomb
- **Review of: *At the Bench, A Laboratory Navigator*, by Kathy Barker**  
**Lab Culture Held up to the Light**  
by Steven DiNardo
- **Review of: *Microscopic Explorations, a GEMS Festival Teacher's Guide*, by Susan Brady and Carolyn Willard**  
**Bringing Science into Focus**  
by Nancy Moreno

## ESSAY

- **A Successful Educational**



Supported in part by an Undergraduate Science Education Program grant from the Howard Hughes Medical Institute

## **Collaboration between Scientists and Educators: *Microscopic Explorations***

by Lincoln Bergman and Caroline Schooley

- **Responding to the Call for Change: The New College of Science Teacher Preparation Program at the University of Arizona**  
by Debra Tomanek, Vicente Talanquer, Ingrid Novodvorsky, and Timothy F. Slater

## **ELECTRONIC RESOURCES**

---

- **Cancer Cell Biology: A Student-Centered Instructional Module Exploring the Use of Multimedia to Enrich Interactive, Constructivist Learning of Science**  
by Susanne M. Bockholt, J. Paige West, and Walter E. Bollenbacher

## **ARTICLES**

---

- **Identifying Novel Helix–Loop–Helix Genes in *Caenorhabditis elegans* through a Classroom Demonstration of Functional Genomics**  
by Vernetta Griffin, Tracee McMiller, Erika Jones, and Casonya M. Johnson

## **FEATURES**

---

- **Education at the National Academies**  
by Jay B. Labov

## **ARTICLES**

---

- **Students' Motivations for Data Handling Choices and Behaviors: Their Explanations of Performance**  
by Leslie Keiler and Brian Woolnough

## FEATURES

---

- **Video Views and Reviews**  
by Christopher D. Watters

## ANNOUNCEMENTS

---

September 3–7, 2005, Sydney, Australia  
**15th International Society of  
Developmental Biologists Congress**

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Killifish embryonic cell migration. These four panels were assembled to honor John P. Trinkaus, Professor Emeritus, Yale University and the Marine Biological Laboratory,

Woods Hole, MA. “Trink” spent his life

studying the directed movements of embryonic cells, focusing on the early rearrangements as cells form the tissues of the young killifish (*Fundulus heteroclitus*). Through the many decades of his research, he took advantage of the revolutions in cell imaging, using different kinds of microscopes, video imaging systems and digital processing to look deeper into the in vivo behavior of these wandering cells.

The first image (upper left) is a low-power scanning electron micrograph of a landscape of deep cells exposed when the overlying epithelium was microsurgically removed. Similar cells are seen (upper right) as they move through the intact, living embryo in a frame from a time-lapse video filmed with Nomarski Differential Interference. Because of the extreme optical clarity of these embryos, details of in vivo cell morphology allow analysis of lamellipodial dynamics (lower left). Molecular technologies have now made it possible to film in vivo cytoskeletal dynamics, as *Fundulus* embryonic deep cells express GFP-actin from plasmids injected soon after fertilization (lower right). This cell is viewed with a spinning disc confocal microscope. Top left image from Figure 2 in Trinkaus, J.P., and C.A. Erickson. "Protrusive activity, mode and rate of locomotion, and pattern of adhesion of *Fundulus* deep cells during gastrulation," *Journal of Experimental Zoology*, Vol. 228, @ 1983, Wiley-Liss. Reproduced with permission of John Wiley & Sons, Inc. Top right image by J.P. Trinkaus and R.D. Fink. Lower left image by R.D. Fink and J.P. Trinkaus. Lower right image by R.D. Fink and P. Wadsworth.

I would like to thank J.P. Trinkaus, Carol Erickson (University of California, Davis), and Patricia Wadsworth (University of Massachusetts, Amherst).

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(Note. J.P. Trinkaus died February 7, 2003. He was 84 years old.)