

JOURNAL OF COLLEGE SCIENCE TEACHING

CONTENIDO

VOLUME 39, No. 5 MAY-JUNE 2010

FACTURES

SPECIAL ISSUE THEME: REASERCH AND TEACHING

- 8 University Facilities as Real-World Foci of Multidisciplinary Science Learning.
Jeremy Wojdak, Judy Guinan, Joseph Wirgau, Charles Kugler, Georgia Hammond, Christine Small, Charles Manyara, Frederick Singer, Chester Watts, Bethany Bodo, and Andrew Balwin.
- 18 Beyond Dissemination in College Science Teaching: An Introduction to Four Core Change Strategies.
Charles Henderson, Noah Finkelstein, and Andrea Beach.
- 26 A comparison of Case Study and Traditional Teaching Methods for Improvement of Oral Communication and Critical-Thinking Skills.
Lynnette Noblitt, Diane E. Vance, and Michelle L. DePoy Smith.
- 34 The Effectiveness of Active and Traditional Teaching Techniques in the Orthopedic Assessment Laboratory.
Sara Nottingham and Susan Verscheure.
- 43 Scientific Research for Undergraduate Students: A Review of the Literature.
Troy D. Sadler and Lyle McKinney.
- 50 Development of a Valid and Reliable Student-Achievement and Process-Skills Instrument.
Diane M. Bunce, Jessica R. VandenPlas, Kelly Y. Neiles, and Elizabeth A. Flens.
- 56 Development of Students' Critical-Reasoning Skills Through Content-Focused Activities in a General Education Course.
Heidi S. Fencil.
- 64 Acquisition and Retention of Quantitative Communication Skills in an Undergraduate Biology Curriculum: Long-Term Retention Results.
Cary D. Chevalier, David C. Ashley, and John W. Rushin.

DEPARTMENTS

- 6 **Editorial**
The Scientific Method Teaching.
Ann Cutler.
- 72 **Favorite Demonstration**
Striking a Match: A Short and Effective Classroom Demonstration in
introductory Biology.
Igor V. Zaitsev.
- 76 **Case Study**
A Question of Responsibility: Whose Asbestos Caused Her Lung Disease?
Joy Branlund.
- 82 **Society for College Science Teachers.**
Perpetually Updating.
Connie Russell.

ALSO IN THIS ISSUE

- 63 **NSTA Conferences**
- 84 **Index of Advertisers**

COVER

This issue of JCST is devoted entirely to Research and Teaching articles. Learn how students benefitted from studying a newly built storm-water remediation wetland on page 8. Discover how case study and traditional teaching methods compare as approaches for teaching scientific oral communication skills on page 26. Read about the development of a nationwide students-achievement and process-skills instrument that was tested for reliability and validity on page 50. **Cover image:** Early morning at Turret Arch seen through North Window, Arches National Park, Utah. Photo provided by Punchstock.