

## Guest Editors' Introduction

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The state of science education in California is much like the rest of the nation. Schools and districts across the country are challenged with issues that mirror our concerns. Issues related to *No Child Left Behind* and an emphasis on raising test scores have left all schools scrambling to improve reading and writing skills, often times at the expense of teaching science. It is a tall order to find models of instruction which integrate science and literacy skills, effectively reach second language learners, empower teachers across the K-12 spectrum to teach science through inquiry and incorporate technology—all while presenting the learning of science as exciting and personally relevant! In spite of this almost unattainable goal, it is what many science educators strive for in their classrooms. We want our courses for preservice teachers and our professional development workshops for inservice teachers to be meaningful and applicable so that the teachers in our midst will instruct their students in a similar manner. There is no single answer on how best to meet this goal, but the articles in this journal share findings to address small pieces of this complex puzzle.

Science educators realize that science, reading, and writing must be linked instructionally. Judith Morrison shares a science notebooking strategy, which integrates science and literacy while serving as a formative assessment tool. Anne Cox-Peterson and colleagues successfully incorporate a service-learning component into their methodology courses. Their students developed and taught integrated science and literacy lessons to children in an after-school program. These authors

argue that using science notebooks and teaching integrated science/literacy lessons in college classes will empower students to implement these strategies when they have their own classrooms.

Californians might think we have a monopoly on schooling issues related to English language learners as we have students speaking so many different languages in our schools. The challenge of reaching and teaching ELL students is not unique to us. John Settlage and his colleagues in Utah, a place most think of as homogenous, discuss data and their concerns about contradictory goals teaching with the SIOP model (Sheltered Instruction Observation Protocol) in a science classroom. The author of the SIOP model, Jana Echevarria, responds to the concerns and provides insight as to better use of the model.

Case studies have long been a staple in education classes. Emily van Zee taps into technology to provide rich case studies to her preservice students. As a result of watching web-based video footage of classroom teaching and subsequent conversations with the teachers they watch, her students' classrooms extend beyond the physical walls to bring science teaching and learning to life.

Daphne Minner and Elisabeth Hiles discuss the challenges inherent in encouraging collaboration over the vast distances encompassed by some rural districts—a problem not limited to just a few states, much of California is highly rural. The Science-Technology-Society approaches, which Pradeep Dass describes, are ones that are successfully implemented in suburban, rural and urban classrooms.

Lastly, the book review opens the doors to one of the nation's top public high schools, Whitney High School in Cerritos, California. The insider view provided by Pulitzer Prize winning author Edward Hume in *School of Dreams*, tells us about life and learning in this top rated science/math/technology magnet school. Maureen McMahon and Gwen Kaven review the book from their unique perspectives after having read the book as professor and student, respectively, in a graduate science education course focused on teaching and learning.