

# Why is there a shortage of science and math teachers?

Elsewhere in this issue you can read that "the Business-Higher Education Forum [BHEF] has projected that our nation will need more than 280,000 new mathematics and science teachers by 2015," and when you do so, you might well wonder how they got this number. This issue of providing a sufficient number of qualified science and mathematics teachers to keep the United States competitive in science and technology has long been a theme of interest to this *Newsletter*, and in the May 2007 issue of *NSTA Reports* Richard M. Ingersoll of the University of Pennsylvania gives new insight on the matter in a quantitative manner. The two most invoked causes of the supply of qualified science and math teachers being dwarfed by the demand for them, he notes, are increasing retirements (due to "graying" of the math and science teaching workforce) and the preparation of an insufficient number of new teachers.

But when Ingersoll looked into the actual data, he found some revelatory insights. Only 11,000 science and math teachers leave their jobs each year, he found, because they were retiring at the end of their careers, and we were producing more than this number of new teachers. After the 1999-2000 academic year, an additional 34,000 science and math teachers left teaching as a career, and "almost 24,000 . . . indicated that job dissatisfaction was a major factor in their departures." Of teachers in general, Ingersoll also writes that "between 40 and 50% leave the field altogether in the first five years on the job. Four factors stand out as important to the high rates of teacher turnover: low salaries, lack of support from school administration, student discipline problems, and lack of teacher input into school decision making."

What propagates a sufficient number teachers in other disciplines, Ingersoll notes, is a surplus of new teachers trained to teach them that doesn't exist in math and science. Thus, one would expect Ingersoll to support the spirit and philosophy of the BHEF's report, "An American Imperative: Transforming the Recruitment, Retention, and Renewal of Our Nation's Mathematics and Science Workforce." Incidentally, if one takes the BHEF figure of 280,000 science and math teachers by 2015 and divides by the 8 years between now and then, one gets 35,000 -- just about the same as the number Ingersoll finds leaving teaching as a career each year.