



# Reflections

NUMBER 27  
APRIL 2008

A NEWSLETTER PUBLISHED BY SCIENCE CURRICULUM INC.

Publisher of *Introductory Physical Science (IPS)* and *Force, Motion, and Energy (FM&E)*  
*Thoughtful Curricula Developing Thinking Students*

200 UNION BLVD., SUITE G-18 LAKEWOOD, CO 80228 888-501-0957 WWW.SCI-IPS.COM

## ***Will Professional Development Improve Achievement?***

By Harold Pratt

For many teachers the question often asked is, “What kind of professional development will help increase test scores?” You might also wonder if a particular development opportunity is worth your time. Both are worthwhile questions, but difficult to answer up front before signing up for a course or workshop.

We at SCI ask similar questions as we design our summer workshops. Working to provide the most useful experience that we can for science teachers, we focus primarily on methods that we believe have the most impact on learning. Feedback gathered at the end of the summer and through later communication has been very positive, but is there any research evidence that what we are doing is effective?

The good news is that there are answers as to what you should be looking for in a professional development opportunity. According to “Teaching Teachers: Professional Development to Improve Student Achievement,” a report recently published by the American Educational Research Association (AERA), professional development should:

- improve teachers’ knowledge of the subject matter that they are teaching;
- enhance their understanding of student thinking in that subject matter, and;
- be aligned with the curriculum and teacher’s actual work.

Course work and workshops that provide “generic” teaching skills such as maintaining classroom discipline, grouping students, and increasing motivation, have only limited impact on student learning.

What about the amount of time spent in professional development? It, apparently, does

make a difference. The more time spent in professional development, the more significant the change in teacher practice – with one major proviso. The experience must focus on subject matter that teachers are teaching. Otherwise, the duration has little effect on teaching practice and student achievement.

Collective participation, sometimes called learning communities—wherein groups of teachers from the same school or department work together to create lessons, review student work, observe each other’s lessons, and discuss their effectiveness—also had a positive effect on teacher knowledge and skills.

The SCI workshops have always had the goals, strategies, and characteristics judged to be effective in the AERA report. The full day sessions for one or two weeks meet the duration criteria and far exceed the usual weekend or after school time often allotted for such activities. By performing the experiments, reaching conclusions based on data, doing problems, and analyzing the content, we make sure that participants in our programs better understand the science and how students learn it. Although few schools are able to send teachers to our workshops as a group, participants quickly form both formal and informal learning communities as they work on experiments in teams, share problem-solving strategies, and discuss teaching methods.

If you or any of your colleagues are thinking about attending the *IPS*, *FM&E* or “Writing Test Questions” workshops this summer, it should be helpful to consider what research tells us about the usefulness of this type of professional development.

You can read the cited AERA research online by clicking [here](http://www.aera.net/uploadedFiles/Journals_and_Publications/Research_Points/RPSummer05.pdf) or by going to [http://www.aera.net/uploadedFiles/Journals\\_and\\_Publications/Research\\_Points/RPSummer05.pdf](http://www.aera.net/uploadedFiles/Journals_and_Publications/Research_Points/RPSummer05.pdf).

Application for the Science Curriculum Inc.
Introductory Physical Science (IPS) Workshop
Force, Motion, and Energy (FM&E) Workshop
Constructing Tests for Science Courses Workshop

Colorado School of Mines
July 13-25, 2008

Course selection - please check the appropriate workshop(s):

- Introductory Physical Science Workshop - July 13-25 2008 (CT-0508-08M)
Introductory Physical Science Workshop (Chapters 1-5 only) - July 13-18, 2008 (CT-0786-08M)
Introductory Physical Science Workshop (Chapters 6-10 only) - July 20-25, 2008 (CT-0845-08M)
Writing Test Questions for Science Courses Workshop - July 14-18, 2008 (CT-0349-08M)
Force, Motion, and Energy Workshop - July 20-25, 2008 (CT-0509-08M)

NAME \_\_\_\_\_

GENDER (please circle one) M F E-MAIL \_\_\_\_\_

SOCIAL SECURITY NUMBER \_\_\_\_\_ DATE OF BIRTH \_\_\_\_\_
(Required when taking course for credit)

HOME ADDRESS \_\_\_\_\_

HOME PHONE \_\_\_\_\_

SCHOOL NAME \_\_\_\_\_ PHONE \_\_\_\_\_

SCHOOL ADDRESS \_\_\_\_\_

SCHOOL DISTRICT NAME \_\_\_\_\_

What is your major field of science teaching? (check one)
Physical Science \_\_\_ General Science \_\_\_ Earth Science \_\_\_ Other (please specify) \_\_\_\_\_

What was your major in college? \_\_\_\_\_ Graduate concentration, if any \_\_\_\_\_

Have you attended a previous IPS or FM&E workshop or summer program? Yes No

Have you taught IPS or FM&E before? Yes No
If yes, which program and for how many years? \_\_\_\_\_ At what grade level(s)? \_\_\_\_\_

Tuition cost: For the two-week IPS workshop, the tuition cost is \$550; for each one-week workshop, it is \$275.

Credit: Credit is awarded by Colorado School of Mines as graduate-level semester hours in Continuing Education. The two-week IPS workshop can be taken for 4 semester hours credit; each one-week workshop can be taken for 2 semester hours credit.

I do \_\_\_ do not \_\_\_ plan to take the workshop for credit. NOTE: The tuition is the same with or without credit, and all registrants are expected to complete and submit all graded assignments and tests.

Your accommodation preference:

Single occupancy room & board: One week (\$309) \_\_\_\_\_ Two weeks (\$622) \_\_\_\_\_
Commuter's lunch (recommended if not residing on campus.) One week (\$45) \_\_\_\_\_ Two weeks (\$90) \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

A non-refundable deposit check for \$50 payable to Science Curriculum Inc. must accompany this application. Please mail both to: Ms. Tasha King, Coordinator of School Services, Science Curriculum Inc., 200 Union Blvd, Suite G-18, Lakewood, CO 80228. Phone: 303-988-5041 or toll-free 888-501-0957; fax: 303-989-1473; email: tasha@sci-ips.com .

# MA Application

Application for the Science Curriculum Inc.  
***Introductory Physical Science (IPS) Workshop***

**King Philip Middle School  
18 King Street  
Norfolk, MA 02056**

**July 28–August 8, 2008**

NAME \_\_\_\_\_

GENDER (please circle one)    M    F                      E-MAIL \_\_\_\_\_

SOCIAL SECURITY NUMBER \_\_\_\_\_    DATE OF BIRTH \_\_\_\_\_  
(Required when taking course for credit)

HOME ADDRESS \_\_\_\_\_

HOME PHONE \_\_\_\_\_

SCHOOL NAME \_\_\_\_\_    PHONE \_\_\_\_\_

SCHOOL ADDRESS \_\_\_\_\_

SCHOOL DISTRICT NAME \_\_\_\_\_

What is your major field of science teaching? (check one)

Physical Science \_\_\_\_    General Science \_\_\_\_    Earth Science \_\_\_\_    Other (please specify) \_\_\_\_\_

What was your major in college? \_\_\_\_\_ Graduate concentration, if any \_\_\_\_\_

Have you attended a previous *Introductory Physical Science* or *Force, Motion, and Energy* workshop or summer program?

Yes    No

Have you taught *IPS* or *FM&E* before?    Yes    No

If yes, which program? \_\_\_\_\_ for how many years? \_\_\_\_\_ at what grade level(s)? \_\_\_\_\_

**Tuition cost:** For the two-week *IPS* workshop, the tuition cost is \$550.

**Credit:** Optional credit is awarded by Colorado School of Mines as graduate-level semester hours in Continuing Education. The two-week *IPS* workshop can be taken for 4 semester hours credit; each one-week workshop can be taken for 2 semester hours credit.

I do \_\_\_ do not \_\_\_ plan to take the workshop for credit. **NOTE: The tuition is the same with or without credit, and all registrants are expected to complete and submit all graded assignments and tests.**

Signature \_\_\_\_\_ Date \_\_\_\_\_

A non-refundable deposit check for \$50 payable to **Science Curriculum Inc.** must accompany this application. Please mail both to:

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