



5-1986

Reaching Out: Colleges Can Make a Difference

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Recommended Citation

George, B. (1986). Reaching out: Colleges can make a difference. *Journal of College Science Teaching*, 15(6), 535-536. Retrieved from <http://www.jstor.org/stable/42988832>

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Reaching Out

Colleges Can Make a Difference

Afternoon institutes and newsletters can help to spread enthusiasm and effective teaching techniques to elementary and secondary science teachers.

Babu George

of science demonstrations and experiments to capture the interest of their students.

We began our program of precollege cooperation in 1980 with a series of afternoon institutes offered free of charge to high school chemistry teachers. These were designed to familiarize teachers with such topics as ultraviolet-visible spectrophotometry, electrophoresis of biological substances, and safety in the academic laboratory.

In 1982 we changed the theme of the institutes to stress the idea that education in the sciences can be fun. The best way we have found to convey both the substance and the excitement of science to young students is through hands-on experiments and demonstrations. In our chemistry institutes, we have covered general demonstration techniques, demonstrations involving specific chemical phenomena such as color in polymer chemistry, and use of computers in chemistry teaching. We have also asked teachers to send in their favorite "fun but educational" experiments to share with others.

In 1983 we introduced another program for high school physics teachers. The physics institutes, sponsored by Sacred Heart University but presented by two experienced high school teachers, used demonstrations and experiments to introduce such subjects as mechanics, electricity, and lasers in an exciting way. These institutes even

helped me, as a chemist, to realize that physics can indeed be fun!

As important as high school science training is to the preparation of students, many prejudices and proclivities develop at an earlier age. In 1983 we added a science program for local elementary teachers. We have introduced these teachers to many experiments that use readily available materials and are suitable for a young audience. We also had a meteorologist from a local radio station present an institute for elementary teachers on how to use an inexpensive weather station.

So far, more than 550 teachers have participated in the institutes. In addition to their direct educational value, the programs have provided a valuable forum for precollege and college teachers to make new friendships, meet old friends, and exchange ideas.

The faculty and staff at Sacred Heart University have also learned valuable lessons from the many talented precollege teachers we have met. Currently, we are revising nonscience-major courses and general chemistry courses to incorporate several enjoyable and educational experiments we have learned.

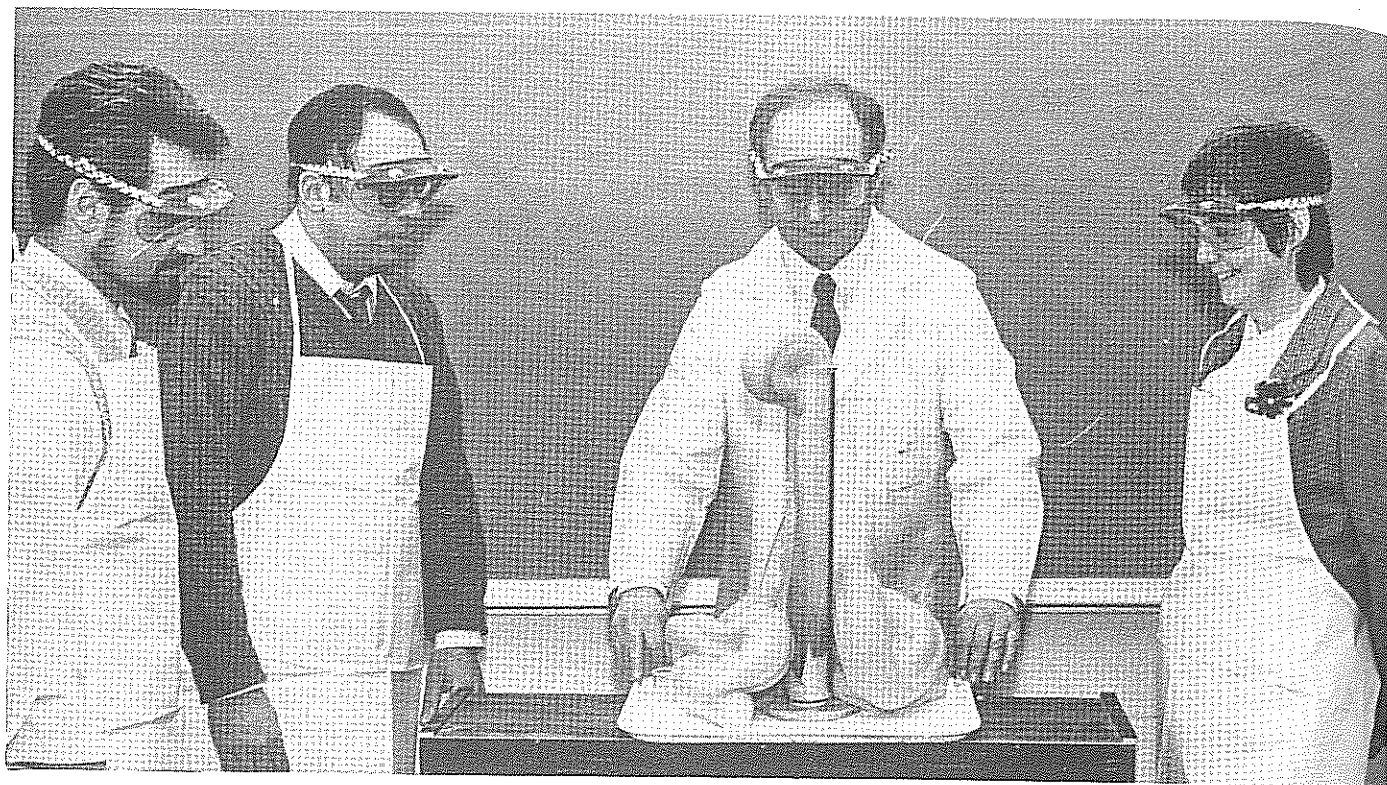
Recently we have experimented with other means of communicating and cooperating with local precollege teachers. In May 1983 we introduced a newsletter, *The Southwestern Connecticut Chemmunicator* and have so far produced nine issues. The editors and

The first step toward improving education is to stop blaming teachers and start helping them. [1]

As college professors, we would do well to heed this bit of advice from former vice-president Walter Mondale. We are quick to complain about the poor preparation, particularly in the sciences, of incoming freshmen, and we have plenty of evidence to back up our complaints [2,3]. But we are all too slow to realize how much we could do to help. By cooperating with local elementary and high schools, we can help them to prepare our future students better. We, in turn, can learn a great deal from them to improve our teaching.

For several years the physics and chemistry faculty, student assistants, and staff of Sacred Heart University have experimented with ways to cooperate with precollege teachers and students. We have offered a series of institutes, visits to university laboratories, and chemistry and physics newsletters to stimulate interest in the teaching and learning of science. We have tried to strengthen the science background of precollege teachers and provide them with concrete examples

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Ron Perkins, a chemistry teacher from Greenwich High School, is demonstrating a "fun but educational" experiment to his colleagues from three different schools.

advisory board are from Sacred Heart University and local high schools. The newsletter includes in-house and guest editorials, a question and answer column, interesting facts, ideas for the classroom, news about area teachers and/or students, humor, a calendar, suggested reading, safety tips, profiles of chemistry teachers, and articles of general interest.

The *Chemmunicator* has stimulated a lively exchange of ideas among local high school and university teachers. Its success led us to introduce, in March 1984, the *PHYSICS SPECTRUM—Teachers Newsletter*. Three issues have appeared so far. A newsletter for elementary school science teachers was published in January 1985. Its three issues have been produced jointly by Sacred Heart University and United Illuminating, the local utility company.

There are many other ways to promote precollege-college cooperation. Work with the local section of the American Chemical Society, NSTA, and various state science teachers associa-

tions may open up doors of better understanding. Recently the Western Connecticut Section of the American Chemical Society, in cooperation with Sacred Heart University, conducted a safety workshop. More than 55 teachers participated.

Occasionally we send a list of seminar topics and speakers to area schools. However, this has met with only partial success, mostly due to scheduling conflicts.

Another possibility is allowing high school students and their teachers to work in college laboratories and get to know some of the instrumentation. Of course, supervision of the students will take time, but this is an excellent way to make sure that high school students and their teachers feel that they are welcome in the college or university.

These are just some of the many possible ways for college teachers to cooperate with local precollege teachers. A good way to learn what cooperative activities will be practical and effective in your community, and to maintain

local ties, is to appoint individuals from the various departments to act as liaisons with local schools.

Many factors have contributed to the success of our cooperative programs. Attention to detail in activity planning is crucial. Having an understanding dean, a sympathetic chief academic officer, and a hard-working secretary is also essential. But we believe that the most important factor in the success of our programs has been our idealistic approach. We have maintained a professional relationship with teachers and students, never mentioning recruiting of students for our university. The programs have succeeded because—true to our advertisement—we have sought "to serve the people of Southwestern Connecticut." □

References

1. *CHEMTECH*, Dec. 1983, p.749.
2. NAEP, Spring 1983 Newsletter.
3. National Commission on Excellence in Education. *A Nation at Risk*. Washington, DC: Government Printing Office, 1983.

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