

The DEAN'S MESSAGE

October has arrived, complete with red leaves on the mountains and crisp morning walks to campus. And we here at the College of Physical and Mathematical Sciences are excited for our alumni and students to enjoy all the experiences that autumn at BYU brings.

We're looking forward to seeing the "Y" light up again in preparation for [Homecoming week](#). BYU will be hosting many visitors and activities, and of course, enjoying [Homecoming Spectacular](#) should be on everyone's list of October activities. This year's Homecoming Spectacular will be in the Marriott Center on Thursday and Friday, October 11 and 12, at 7:30 p.m. But the departments in our college will also be welcoming alumni back with reunions and dinners throughout the week. Please check the links to the right to find your department's homecoming activity.

This month also brings chemistry to life by celebrating [National Chemistry Week](#), happening October 21–27. There will be plenty of attractions to entertain and surprise visitors, such as chemical magic shows, symposiums, and research poster sessions. The celebratory week is designed to help the public better understand the importance of chemistry to our society. But of course, it's also simply a great family outing!

We are also pleased to announce the release of the Fall 2012 issue of *Frontiers*, our alumni magazine. This is a great publication, filled with announcements for upcoming events and stories about our amazing students and faculty. You can catch up with other alumni and some of your favorite faculty members by learning about their careers and research. This fall, we've highlighted the work of Norman Jarvis, Steven Wood, Eric Christiansen, Bruce Schaalje, and others.

Now that the first month of the semester has passed by, our students are realizing just how much work and excitement CPMS classes entail. As those who have passed through some of these classes, you too know the frustration of difficult computations or investigations and the excitement of watching your research yield the fruits of success. Because of your experience at CPMS as well as the working world, you are the perfect resource for our students to find great jobs after graduation. You can become a mentor and help change one student's future. To learn more about how you can get involved with alumni mentoring, visit cpms-alumni.byu.edu. When we teach the rising generation, we're really investing in a better future.

.....➔ **Scott Sommerfeldt, Dean**

DEPT. NEWS

COLLEGE

[Alumni Lecture: One to a Google](#)

CHEMISTRY & BIOCHEMISTRY

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[Homecoming Field Trip](#)

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PHYSICS AND ASTRONOMY

[The Sun in Action: Steven Spangler](#)
[Homecoming Alumni Dinner](#)

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FRONTIERS MAGAZINE

[Fall/Winter 2012 Issue & Videos](#)

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BURST ONTO THE RESEARCH SCENE

BYU science classes might blow you away—literally.

Although exploding balloons might seem like just another distraction to keep students awake in science classes, they can also be used in serious scientific research. Recently, two BYU professors used exploding balloons to better understand how sounds like those created by other loud sources—rockets, military jets, bombs, and shotguns—travel around us.

"It's fun science. You get to blow things up, and I don't know how things get better than that," Professor Kent Gee said with a smile. "But it's also real science. There are questions there that no one's ever explored before, which makes it even better."

This research into exploding balloons actually began in an effort to ensure that chemical demonstrations in the classroom were safe. Chemistry professor Jeff Macedone approached Gee with the idea of determining just how loud blowing up hydrogen-oxygen balloons in a classroom can be, and if the explosions might pose a danger to the students' hearing.

This is a common classroom demonstration done throughout the world. When Gee and Macedone first did the experiment, they were shocked by how loud the explosions were. Gee, who studies acoustics, became worried about the auditory risks.

"With every single [blast], you are running some risk of suffering permanent hearing damage," Gee said. Gee and Macedone were surprised at how little information was available on the auditory danger of these explosions and decided to study them more. Their results helped to change the way some classroom experiments were done.

However, the duo did not stop with their study of classroom demonstrations. During their experiments, Gee noticed that these explosions were acoustically similar to bomb explosions and other very loud noises. They realized that exploding balloons could be used as a new, safer way of studying these big booms.

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