

The Centrality of Chemistry

During my time as President of the American Chemical Society in 2008, and now Immediate Past-President in 2009, I gave presentations to numerous audiences about the Centrality of Chemistry. Central to that theme is the globalization of our science as we undertake our craft—in the words of the American author Thomas Friedman—in an increasingly flat world. Chemistry not only has the potential to solve many of the global challenges that transcend national or even continental boundaries, but also provides a platform to bring our world closer together.

Earlier this year, it was truly a privilege to present my thoughts as a plenary lecture at the 32nd Annual Meeting of the Brazilian Chemical Society in Fortaleza. This trip was my first visit to Brazil, and it was such a great pleasure. Not only did I get to see some of the beauty of your country, but I had the opportunity to witness firsthand the diversity and vitality of Brazilian chemistry. And that was very impressive indeed!

This editorial is directed primarily at chemistry students in Brazil—those I had the pleasure of meeting in Fortaleza and those whom I hope to meet in the future. You are the future of the chemical sciences in your country and will be part of the increasingly important global network of chemists that will use our science to address problems in both basic and applied science.

At the SBQ conference, I was very impressed with the passion of students about their chemistry. The poster sessions acknowledged and even heralded integrated networking between and among research groups in Brazil—collaborative efforts that are due to the efforts of the Brazilian chemistry faculty in nurturing collaboration and exchange among those groups. It is striking that the Lattes Database now has around 1,100,000 entries, and that 59% are graduate or undergraduate students. You have clearly latched onto chemistry as a field that fascinates you, challenges you, and that offers a future rich with opportunities. I agree with that view wholeheartedly, and congratulate you on your choice.

And yet, there are many—students, citizens, government officials—in your nation as well as mine who see chemistry as an aging, mature field that lacks the excitement of other

fields, such as molecular biology and nanotechnology. It is ironic that these younger fields depend completely on chemistry for their existence. So is chemistry mature and out of fashion?

My thoughts on this question parallel those of Professor George Whitesides of Harvard University, the 2007 ACS Priestley Medalist and one of the most insightful and forward-thinking of chemistry researchers. Whitesides and I believe that chemistry is an incredibly *young* science with so many unanswered important questions. For example, can we truly simulate the behavior of solutions? Can we design drugs rationally? Can we make materials by design? Can we control excited states? And, perhaps our ultimate challenge: Can we understand the chemical basis for life and thought? You will think of other grand challenges that will provide the grand research problems of your generation.

I challenge you to think big and go after hard problems. And I also challenge you to be a protagonist and role model of our science, and to teach others about the centrality of chemistry. I am delighted that, in his recent editorial our colleague, Jailson B. de Andrade, challenged us to “think like a scientist and act like a teacher”.¹ That is sound advice that we all must heed.

In closing, I ask that you celebrate the centrality of chemistry in your future work in our craft. Focus your science and its tools, your methods and techniques. It is through your efforts, individually and in collaboration, that you will address some of the 21st Century’s most serious global problems, including solutions to the need for safe water, coping with climate change, combating disease, and developing new fuels. You will and you must succeed.

Bruce E. Bursten

Immediate Past-President
American Chemical Society

References

1. de Andrade, J. B.; *J. Braz. Chem. Soc.* **2009**, 20(4), vi.