

## Plenary Speakers Sunday, July 29, 2012

Dr. Bassam Shakhashiri

5:15 PM – 6:15 PM Eisenhower Auditorium

### Chemistry: A Key to Human Progress



Today our biggest challenge is to help sustain Earth and its people in the face of population growth, finite resources, malnutrition, spreading disease, deadly violence, war, climate change, and the denial of basic human rights, especially the right to benefit from scientific and technological progress. Science and society have what is essentially a social contract that enables great intellectual achievements but comes with mutual expectations of benefiting the human condition and protecting our planet. Purposeful communication of the critical role of science and technology in society can help alter attitudes of our students and of the general public and can also foster collaboration among people across geographic boundaries to work together to solve global grand challenges.

Education is the most critical ingredient for enabling effective collaboration among scientists, enlightened policymakers, and a science-literate public who understand the benefits of scientific and technological progress. But we need better education in all areas, not just in science. Creativity is fostered by an interaction of ideas from all areas of human knowledge. In a democracy, well-educated people can make wise decisions regarding science and technology for the benefit of all.

Advancing chemistry and communicating chemistry are two of our major responsibilities. We advance chemistry through research, education, and innovation. Basic research in science has greatly increased our understanding of nature, triggered creative waves of invention and innovation, and prompted technological breakthroughs that were inconceivable just a few short decades ago. Communicating chemistry to fellow scientists and to the world is one of the core functions of the American Chemical Society and its members. Communicating the values and role of the chemical sciences to nonspecialists is another of our important responsibilities. One purpose of communicating chemistry is to showcase chemistry at its best in addressing significant human and societal issues.

We all do what we do because it interests us, it satisfies our curiosity, we enjoy it. However, we have a responsibility to humanity as a whole. I believe it is not enough for us to be just scientists or just teachers; we have a responsibility to be citizens, as well. As scientist-citizens we have an obligation to use our skills for the benefit of all. That requires each of us to have and adhere to high values and virtues as scientists and citizens to advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people.

Bassam Z. Shakhashiri is the first holder of the William T. Evjue Distinguished Chair for the Wisconsin Idea at UW-Madison. He is well known internationally for his effective leadership in

promoting excellence in science education at all levels, and for his development and use of demonstrations in the teaching of chemistry in classrooms as well as in less formal settings, such as museums, convention centers, shopping malls and retirement homes. His scholarly publications, including the multi-volume series, *Chemical Demonstrations: A Handbook for Teachers of Chemistry*, are models of learning and instruction that have been translated into several languages. He is an advocate for policies to advance knowledge and to use science and technology to serve society. He promotes the exploration and establishment of links between science, the arts and the humanities, and the elevation of discourse on significant societal issues related to science, religion, politics, the economy, and ethics. He received the 2002 American Association for the Advancement of Science (AAAS) Award for Public Understanding of Science and Technology, "for his tireless efforts to communicate science to the general public, and especially children." In 2004 he was inducted into the Hall of Fame of the national chemistry fraternity Alpha Chi Sigma. In 2005 he received the Madison Metropolitan School District Distinguished Service Award for a Citizen, the Chemical Pioneer Award from the American Institute of Chemists, the ACS Helen M. Free Award for Public Outreach for "lifelong accomplishments and for explaining and demonstrating science with charisma and passion," and was cited in the *Answer Book of Capital Newspapers* as the "coolest UW professor." In 2007 he received the National Science Board Public Service Award and was cited for "extraordinary contributions to promote science literacy and cultivate the intellectual and emotional links between science and the arts for the public." Professor Shakhshiri is the 2011 President-Elect of the American Chemical Society, and will serve one-year terms as president in 2012 and immediate past president in 2013.