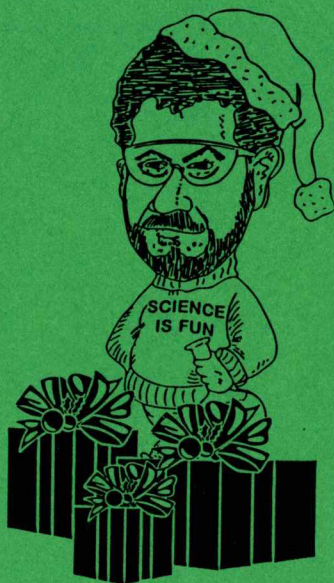


29th Annual

*Once Upon A Christmas Cheery
In The Lab of Shakhshiri*

December 1998



December 5 (1:30 & 4:00 pm)

December 6 (1:30 & 4:00 pm)

*Farrington Daniels Chemistry Building
University of Wisconsin-Madison*



Michael Faraday's Christmas Lecture

Michael Faraday, the noted English physicist and chemist, lived from 1791 to 1867. He was a gifted lecturer, and he began giving his Christmas Lectures for children at the Royal Institution of Great Britain in the 1840s. Faraday loved simplicity, and he had a strong sense of the dramatic. His audience entered wholeheartedly into the world of science with him as guide. His ideas were still considered very unorthodox at that time, and children, who had not yet adopted conventional ideas, would react enthusiastically to the ones he presented. Eventually, the lectures became very popular, and even the Prince of Wales attended and learned about the mysteries of electricity. Faraday sought to awaken the sense of wonder in his listeners. He knew that once a person could be made to wonder about the world, it was only a short step to studying it. He strove to point out that if you looked closely at the most ordinary thing, such as the force of gravity, it ceased to be ordinary and became somehow miraculous. Faraday did all he could to urge his listeners to see and judge for themselves, to experiment--to question nature directly--whenever anyone discovered something out of the ordinary.





Bassam Z. Shakhashiri

"Scientist by training, teacher and public servant by trade, advocate by conviction, optimist by nature"—that is the way Bassam Z. Shakhashiri describes himself. As Professor of Chemistry at the University of Wisconsin-Madison, Dr. Shakhashiri finds outlet for all four attributes, to which he might add a fifth: entertainer by avocation.

Dr. Shakhashiri, as a matter of fact, is probably best known to the public at large for his annual entertainment, "Once Upon a Christmas Cheery/In the Lab of Shakhashiri." The science-oriented "magic" show has played to packed houses at such varied places as the University of Wisconsin-Madison, the National Academy of Sciences and the Smithsonian's National Air and Space Museum in Washington, and Boston's Museum of Science. This show and other science-oriented programs also have been featured on local and national broadcasts including Wisconsin Public Television, the NBC Nightly News with Tom Brokaw, the Cable News Network, and the Larry King Show.

The show is Dr. Shakhashiri's way of proving that "science is fun" (the legend on a T-shirt he dons for the show). By demonstrating how much fun it can be, Dr. Shakhashiri, in his role as advocate for science, seeks to impart the joy of discovery that has aroused young minds throughout history. This excitement, he believes in his role as optimist, will lure future generations to careers as researchers, entrepreneurs and teachers on whom the nation's continuing economic health and national security will depend. More importantly, he advocates the achievement of literacy in science, mathematics, and technology among those who choose other pursuits. He believes it is essential for the well being of our society that all citizens develop an understanding and an appreciation of science, the benefits of technology, and the potential risks associated with advances in both.

A native of Lebanon, Dr. Shakhashiri is the son of a physician who recently retired from the U.S. National Institutes of Health in Bethesda, MD. The Shakhashiris, father, mother, son and two daughters, came to the United States in 1957 when Bassam was 18 years old with one year of college (at the American University

of Beirut) behind him. He completed undergraduate work at Boston University (Class of '60) with an A.B. degree in chemistry, served as a teaching fellow at Bowdoin College for one academic year and then earned master's and Ph.D. degrees in chemistry at the University of Maryland ('64 and '68 respectively).

After a year as post-doctoral research and two years as a junior member of the chemistry faculty at the University of Illinois, Urbana, Dr. Shakhashiri joined the faculty of the University of Wisconsin in 1970, a position he has held since. In 1983 he founded the Institute for Chemical Education and served as its first director.

On June 26, 1984 he was sworn-in as Assistant Director of the National Science Foundation for Science and Engineering Education by the President's Science Adviser. In this position he was the principal education officer of the government agency chiefly concerned with research in the natural sciences and engineering. As such, he was responsible for the design and administration of a wide variety of programs to improve all levels of education in mathematics, engineering and the sciences.

He presided over the rebuilding of the NSF efforts in science and engineering education after they had been essentially eliminated in the early 1980's. His vision and effectiveness in developing and implementing national programs in science and engineering education became legend and have set the NSF education effort on its strongest programmatic direction and biggest budget ever (over \$600 million in 1990s—up from about \$100 million in 1988).

In September of 1990 he returned to Madison and resumed teaching introductory level chemistry to over 700 students annually. In addition, he continues his advocacy for both increasing the flow of talent to careers in science and achieving science literacy by the public at large.

The Christmas show is only one demonstration of Dr. Shakhashiri's attachment to hands-on science. He is well known nationally for his development and use of demonstrations in the teaching of chemistry in lecture rooms and laboratories as well as in such less formal settings as convention centers, shopping malls and retirement homes. He is a guest on radio talk shows across the country and is featured regularly on the Larry Meiller Show

on the Wisconsin Educational Radio Network. One of his best known efforts is an interactive chemistry exhibit on permanent display since 1983 at the Chicago Museum of Science and Industry. He has co-authored several publications including: Manual for Laboratory Investigations in General Chemistry; Workbook for General Chemistry Audio-Tape Lessons; Chemical Demonstrations: A Handbook for Teachers of Chemistry, Volumes 1, 2, 3 and 4; and semi-programmed booklets on equilibrium, kinetics, and organic chemistry. The Shakhashiri Chemical Demonstrations Videotapes were published in 1991 by Holt, Rinehart and Winston, Inc. and Saunders College Publishing Company.

Dr. Shakhashiri is a member of many scientific and educational organizations including the American Chemical Society, in which he has held numerous leadership positions at the local and national levels. In 1986, he was elected a fellow of the American Association for the Advancement of Science in recognition of his scientific and educational achievements.

Among his many awards are the 1977 Keikhofer Distinguished Teaching Award from the University of Wisconsin-Madison, and the 1979 Manufacturing Chemists Association Catalyst Award. He is the youngest recipient of two of the American Chemical Society's most coveted recognitions—the James Flack Norris Award for Outstanding Achievement in the Teaching of Chemistry (1983) and the ACS Award in Chemical Education (1986). In 1987, he was cited for distinguished public service by the District of Columbia Science Education Association, the National Science Teachers Association, the South Carolina Academy of Science, and the Boston University General Alumni Association.

In 1988 the George Washington University conferred upon him the degree of Doctor of Public Service, and Illinois State University awarded the degree of Doctor of Humane Letters for distinguished service to the science of chemistry and to the nation. In 1991 he was awarded an honorary doctoral degree by Ripon College in recognition of his outstanding national contributions to science education. In 1992 he was awarded an honorary doctoral degree from the University of Colorado. In 1993 he was awarded an honorary doctoral degree from Grand Valley State University. In 1994 he was elected to the Teaching Academy of the University of Wisconsin-Madison.



As we mark the Sesquicentennial Year of both the State of Wisconsin and the University of Wisconsin we look back with pride at so many tremendous accomplishments that have greatly contributed to advancing the quality of life in our State and around the world. These accomplishments are the results of dedicated hard work by so many in the University community generously supported by the State, the Federal Government, and the private sector. For those interested in a glimpse of selected highlights please look at the Web site: <http://www.uw150.wisc.edu/>

I have been a faculty member at Wisconsin for almost one fifth of the life of the University. I am pleased to share with you a partial list of my activities and accomplishments.

- 1970 assistant professor of chemistry
- 1971 Committee on Undergraduate Education (chair 1975-1977)
- 1972 Faculty senate (elected)
- 1973 Launched *CHEMISTRY Teaching Information Processing System*
- 1976 promoted to associate professor with tenure; General Chair, American Chemical Society 4th Biennial Conference on Chemical Education
- 1977 Founding Chair, UW System Undergraduate Teaching Improvement Council
Workbook for General Chemistry Audiotapes (with Rodney Schreiner and Phyllis Meyer)
- 1978 College of Letters & Science Academic Planning Council (thru 1980, elected)
- 1979 One of two finalists for the editorship of the *Journal of Chemical Education*
- 1980 promoted to professor of chemistry
- 1981 Chair, ACS Division of Chemical Education
Chair, ACS Wisconsin Section
- 1982 Ron Gibbs Award for Distinguished Contributions to Science Education, WI Society of Science Teachers

- 1983 Founding Director, Institute for Chemical Education
Interactive Chemistry Exhibit, Chicago Museum of
Science and Industry
- 1991 Began (almost) monthly appearances on the Larry
Meiller Show of the Wisconsin Ideas Network of
Wisconsin Public Radio
- 1995 Cited as the "reigning dean of lecture demonstra-
tors" in the Encyclopedia Britannica
- 1996 Wisconsin Academy Committee on Science & Math
Standards (chairman)
- 1998 Presidential Initiative Award, Sacred Heart Univer-
sity

Detailed information about this year's experiments and many others may be found in CHEMICAL DEMONSTRATIONS: A HANDBOOK FOR TEACHERS OF CHEMISTRY, Volumes 1-4, Bassam Z. Shakhashiri, (1983, 1985, 1989, and 1992), University of Wisconsin Press, 114 North Murray Street, Madison, WI 53715; 608-262-8782.

For a collection of experiments you can do at home, visit the Science is Fun Web site at <http://scifun.chem.wisc.edu>.





Acknowledgements

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University of Wisconsin-Madison

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