NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

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Hosted by Professor Ding Jeak Ling

Spreading science throughout society: How and why?



***About the Speaker**: Bruce Alberts, a prominent biochemist with a strong commitment to the improvement of science and mathematics education, was awarded the National Medal of Science by President Barack Obama in 2014. Dr. Alberts served as Editor-in-Chief of Science (2009-2013) and as one of the first three United States Science Envoys (2009-2011). He is now the Chancellor's Leadership Chair in Biochemistry and Biophysics for Science and Education at the University of California, San Francisco, to which he returned after serving two six-year terms as the president of the National Academy of Sciences (NAS).*

Bruce is also noted as one of the original authors of The Molecular Biology of the Cell, a preeminent textbook in the field already in its sixth edition. For the period 2000 to 2009, he served as the co-chair of the InterAcademy Council, a new organization in Amsterdam governed by the presidents of 15 national academies of sciences and established to provide scientific advice to the world.

By **Dr Bruce Alberts**

Chancellor's Leadership Chair in Biochemistry and Biophysics for Science and Education at the University of California, San Francisco, USA.

The knowledge and the problem-solving skills of scientists are critical for every nation –no matter how rich or poor. Thus, for example, science has produced a deep understanding of the natural world that often enables an accurate prediction of the consequences of current actions on the future. In addition, every society needs the values of science: honesty, generosity, and an insistence on evidence while respecting all ideas and opinions regardless of their source of origin. To spread such values, science education needs to be redefined at all levels, with much less emphasis on the memorization of science facts and terms. Instead, we should be providing empowering experiences in problem-solving that take advantage of the curiosity that children bring to school and increase a student's understanding of the world. Closely related changes in the introductory science courses in college, emphasizing "science as a way of knowing," are the key to driving these reforms. Even more broadly, we must focus on making a science out of education, which means creating continuously improving education systems at all levels, based on evidence-based analyses of how people learn and what works in actual classrooms. None of this can be expected to happen without the permanent involvement of each nation's scientists, in close partnerships with science teachers at all levels.

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