



**William Fisk**

**William J. Fisk** is a Sr. Staff Scientist and Department Head of the Indoor Environment Department at Lawrence Berkeley National Laboratory. He has conducted research for 30 years at Lawrence Berkeley National Laboratory on indoor environmental quality and energy efficiency. His current research focuses on technologies for ventilating and controlling indoor air quality, on the relationships of indoor environmental quality with health and performance, and on the economic consequences of indoor environmental quality. He serves on the Editorial Board for the journal *Indoor Air*, was elected to the International Academy of Indoor Air Sciences in 1999, and has served on National Academy of Sciences – Institute of Medicine committees on Asthma and IAQ and on Damp Buildings, Mold and Health. He has been active in the American Society of Heating, Refrigerating, and Air Conditioning Engineers and is a Fellow of that organization. Mr. Fisk received MS and BS degrees in mechanical engineering from the University of California, Berkeley and the University of New Mexico, respectively.

### **Keynote Abstract**

#### **“Benefits of Improved IEQ: Better Health and Improved Work and School Performance”**

The evidence is becoming compelling – improvements in indoor environmental quality (IEQ) can enhance our comfort and health and increase our work and school performance. Tobacco smoking, indoor air temperatures (or possibly thermal comfort), outdoor air ventilation rates, building dampness and mold, and air conditioning are among the IEQ factors most strongly linked to people’s health and performance. This paper will review the underlying scientific evidence of the linkage of IEQ to health and performance and provide updated estimates of the possible U.S.-wide reductions in adverse health effects, improvements in performance, and associated economic gains from selected practical IEQ improvement scenarios. The projected economic benefits are billions of dollars per year. The paper will also identify key knowledge gaps and priority research needs. The knowledge gaps include a lack of understanding of the mechanisms by which many IEQ factors affect work and school performance and a very limited knowledge of how much IEQ affects high level cognitive performance. Research is needed to bridge these gaps. In addition, given the risks of global climate change, a high priority should be placed on research that develops approaches for attaining IEQ-related benefits while dramatically reducing building energy consumption.