Introduction to the International System of Weights and Measures

Dr. Willie E. May

Director, NIST
Vice President, International Committee on Weights and Measures
willie.may@nist.gov

Mankind has long recognized the need for measurement science and standards to support construction, manufacturing and trade. During the past 100+ years, National Metrology Institutes (e.g. NIST and its global counterparts) have developed sound programs for physical metrology focused on the realization of SI units for time, mass, length, temperature, electricity, etc. But modern society also requires confidence in the comparability of measurements regarding the composition, structure and properties of diverse types of “stuff” to underpin sound decisions about things that affect the quality of our everyday lives. E.g., these decisions guide actions that affect the safety and quality of our food, air and drinking water; the accuracy of medical tests and efficacy of treatment decisions; appropriate composition of materials to provide functional properties, performance and reliability of “stuff” needed in a wide range of sectors such as, transportation, housing, manufacturing, etc. This talk will provide a very brief overview of the International System of Weights and measures and explain the roles and responsibilities of its ten expert Consultative Committees and the National Metrology Institutes, and set the stage for the two sessions that follow.