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NIST DIVISION CHIEF



Improving Quality of Life: Measurement Science at National Institute of Standards and Technology (NIST)

March 26 @ 4:30 pm

Cardwell 103 or Zoom

Refreshments in CW 119 at 4 pm

KANSAS STATE
UNIVERSITY

Department of Physics

NEFF LECTURE

Did you ever wonder how we know the duration of a second, the mass of a kilogram, or the quantity of a gallon of gas? National Institute of Standards and Technology (NIST), a federal agency, makes trusted measurements and is responsible for disseminating the *Système Internationale (SI)*, a system of units agreed to by international treaty. In 2019, the SI was redefined based entirely on natural physical constants, removing all human artifacts. In this lecture, I'll explain the role of NIST, and describe the recent changes in the SI, based on replacing the artifact kilogram with physical measurements. NIST's metrology work extends to precisely measuring laser power, with impacts ranging from satellite-based climate sensing to gravitational wave observatories. At the faintest light levels (single photons), NIST's detectors are some of the most efficient in the world, opening applications from quantum computing with light, to imaging faint light from distant galaxies. Please join me in discovering how NIST's trusted measurements shape our world.