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NFDI Physical Sciences Joint Colloquium

The Next Decade of the US Materials Genome Initiative

by **James A. Warren**

Director of the NIST Materials Genome Program

Abstract:

The US Materials Genome Initiative has just begun its second decade. With a goal of accelerating the discovery, design, development, and deployment of new materials into manufactured products, the MGI is focused on the creation of a materials innovation infrastructure. My institution, the National Institute of Standards and Technology (NIST), has framed its support for the MGI around the need for a data infrastructure that enables the rapid discovery of existing data and models, the tools to assess and improve the quality of those data, and finally the development of new methods and metrologies based on that data. In partnership with agencies across the government, academia, industry, and synergistic efforts around the globe, these approaches are now yielding significant advances. Of particular note is the potential for machine learning and artificial intelligence applications upon these troves of data, which is now being borne out, and the vast consequent opportunities for new discoveries. Additionally, and in light of the many changes in how materials R&D is done, the MGI is has just released a new strategic plan, charting a plan for the next 10 years of an evolving materials innovation infrastructure, which I will review in this lecture.

Date and time: 5 May 2022 at 10:15

Location: Humboldt-Universität zu Berlin

Erwin-Schrödinger-Zentrum, room 0'119

Rudower Chaussee 26, 12489 Berlin - Adlershof

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