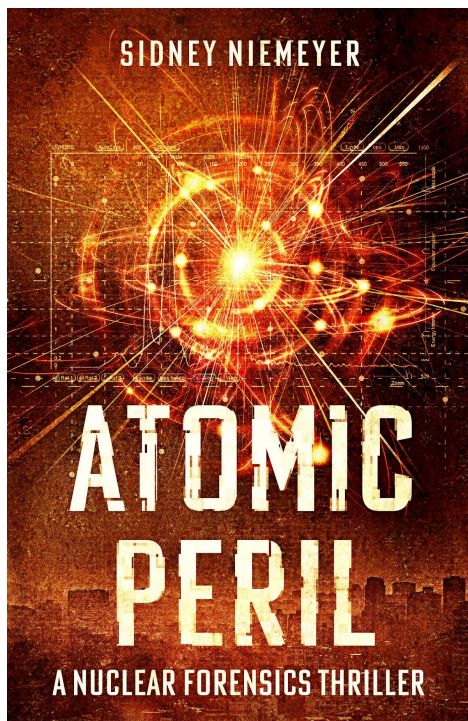


Physics Department Seminar

11 am April 29, 2024, Science Building Room 126

Nuclear forensics—a case study in multidisciplinary science

Dr. Sidney Niemeyer



Abstract: The field of nuclear forensics began in response to the new reality of a post-Cold-War world. Physicist Sidney Niemeyer describes his role in developing this field, including an early case that illustrates the need for a diverse set of experts. The talk will conclude by describing his challenges in writing a realistic nuclear forensics thriller.

Bio: Dr. Niemeyer's research career emphasized the application of isotopic measurements in multi-disciplinary studies, beginning with his physics PhD thesis at the UC Berkeley. He initially focused on the origin of the solar system by studies of meteorites and lunar samples. Subsequently he conducted geochemical research on the evolution of the earth's crust and mantle, as well as applying geochemical tracing techniques to hydrological and environmental issues. Among his leadership roles at Lawrence Livermore National Laboratory (LLNL), he served as the Nuclear Chemistry Division Leader. In this role, he began to articulate the need to develop a nuclear forensics capability. For more than a decade he was a leader in the international development of nuclear forensics as a new discipline. For the first three years of DHS, he served as a detailee for Radiological and Nuclear Forensics. In this role he served as Thrust Area Leader for the associated R&D program, and as the point-of-contact with the interagency to develop a national capability. After his retirement from LLNL in 2007, he joined the DHS Nuclear Forensics Science Panel that provides reviews of the U.S. nuclear forensics R&D programs and conducts special reports for U.S. agencies.