

Thursday February 27, 2025

Refreshments at 3:15PM outside PSF 101
Colloquium from 3:30PM – 4:30PM in PSF 101

Probing Molecular Dynamics from Within with Free Electron Lasers

Dr. Nora Berrah

University of Connecticut



Abstract:

The past fifteen years have seen the exciting development of free electron lasers (FELs) around the world, leading to an explosion of new science, in the femtosecond and very recently in the attosecond regime. I will present time-resolved experiments using pump-probe technique with FELs to watch, in real time, the response of molecules to FEL pulses at the femtosecond and attosecond regime, as well as to examine the role of physical and chemical effects and how they lead to the timing of bonds breaking and bond forming.

Biography:

Nora Berrah is a Board of Trustees Distinguished Professor in the Physics Department at the University of Connecticut, where she also served as department head from 2014 to 2018. She earned her bachelor's in theoretical physics from the University of Algiers, a PhD from the University of Virginia, and has held positions at Argonne National Laboratory and Western Michigan University. Her research focuses on experimental Atomic, Molecular, and Optical Physics. Berrah has received numerous honors, including the David S. Shirley Award, a Humboldt Fellowship, and an Honorary Doctorate from the University of Turku. She is an APS and AAAS Fellow, recipient of the 2014 APS Davisson-Germer Award, and a member of both the American Academy of Arts and Sciences and the National Academy of Sciences. Berrah has also contributed to increasing diversity in physics, organizing a conference for women and gender minorities in physics in 2025 at UConn.