Abstract:
Our current project at Sandia National Laboratories aims to enable chip-scale implementation of quantum key distribution in a working link. This project is an exciting, multi-disciplinary effort which covers a variety of topic areas in communication, information science, device physics, among others. In this talk, we will discuss discrete and continuous variable QKD protocols, their implementation requirements, and the steps that we have taken at Sandia to build a chip-scale QKD link.

Biography:
Junji Urayama is a technical staff member at Sandia National Laboratories in the Laser Applications Department. Currently, he is a member of the DOE Grand Challenge project on chip-scale quantum key distribution. His work at Sandia has spanned areas such as nonlinear molecular spectroscopy, optically-driven quantum coherent control, and ultrabroadband optical communications. He obtained his Ph.D. at the Center for Ultrafast Optical Science at the University of Michigan investigating ultrashort dynamics in nanostructures. Before joining Sandia, he worked on single photon emitters at UCSB, Stuttgart, and ETH.

Sponsors: CHTM, ECE, Physics & Astronomy, IEEE Photonics Society, SPIE and OSA Student Chapters

Contact: Doris Williams 272-7764, dorisw@chtm.unm.edu