1. Correlated Imaging / Ghost Imaging
   Correlated imaging, also more commonly known as ghost imaging (GI), is a novel imaging technique that separates the processes of object interrogation and image formation. In GI, the photons transmitted or reflected by the object are collected with a bucket detector (essentially a single-pixel camera) that does not need to resolve the spatial information of the object. This geometry thus allows certain special properties to be imposed on the object detector. In this talk, I will describe the principle and the recent advances of this field. In particular, I will highlight its potential application to high-resolution low-intensity microscopy.

2. Compressive Quantum Imaging
   Compressive sensing is a novel sampling method that can be used to reduce the physical resources of an optical imaging system. In this presentation, I will discuss its relevance to quantum imaging with entangled photons, and describe some recent experiments that provide new insights into how much information we can extract from a photon.

3. Quantum Super-resolution and Super-sensitive Measurement
   Classical optical measurement and imaging are constrained by the diffraction limit in resolution and the standard quantum limit in noise performance. In this talk, I will describe the use of entangled states of light to beat both of these limits, and investigate the fundamental quantum limit of optical imaging.