Department of Physics and Astronomy presents:

**2D Magnets: Discovery, Challenges, and Opportunities**

**ABSTRACT**

Magnetism, one of the most fundamental physical properties, has revolutionized significant technologies such as data storage and biomedical imaging, and continues to bring forth new phenomena in emerging materials and reduced dimensions. The recently discovered magnetic 2D van der Waals materials (hereafter abbreviated as “2D magnets”) provide ideal platforms to enable the atomically-thin, flexible, lightweight magneto-optic and magnetoelectric devices. The seamless integration of 2D magnets with dissimilar electronic and photonic materials further opens up exciting possibilities for unprecedented properties and functionalities. In this talk, I will speak on our experimental observation of the 2D ferromagnet, analyze the current progress and the existing challenges in this emerging field, and show how we push the boundary by making “2D antiferromagnets” rising stars in spintronics. I will also highlight the promises of 2D materials and heterostructures in the significant applications such as low-power spintronics and quantum computing/communication.