Physics & Astronomy Colloquium
Fall 2021

Tuesday, Oct 5th at 3:30 pm

(Zoom colloquia: Please find the meeting information below)

Dr. Yonatan Kahn

The University of Illinois at Urbana-Champaign

Dark Matter Meets Condensed Matter

As the gravitational evidence accumulates inexorably that dark matter comprises the vast majority of the mass of the universe, the particle nature of dark matter remains a mystery. New laboratory experiments are being commissioned to probe dark matter lighter than the proton mass, but the signatures in these detectors rely crucially on the condensed matter properties of the detector material. I will survey the progress made in understanding existing detectors and designing future ones which operate in this unusual low-energy regime, driven by an incredibly fruitful and rich collaboration between condensed matter physicists and particle physicists, both theorists and experimentalists. I will describe a new approach which helps to identify novel condensed matter systems with optimal material properties for dark matter detection, bridging high- and low-energy physics and ensuring that no stone is left unturned in the hunt for dark matter in the laboratory.

Zoom meeting ID: 995 291 7599 Passcode: PHAS

(Find more information at Department Colloquia Webpage)