

**Space Science Seminar**  
**Tuesday, 2017 Apr 4**  
**10:30 a.m.**  
**NSSTC/2096**

**Probing Dark Matter with Cosmic Rays**

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Host: Dr. Michelle Hui (Sponsored by ST12)

There is overwhelming evidence that non-baryonic dark matter constitutes  $\sim 85\%$  of the mass in the Universe. Many promising dark matter candidates, like Weakly Interacting Massive Particles (WIMPs), are predicted to produce Standard Model particles like gamma rays and cosmic rays via annihilation or decay. These messengers would be observed by space-based detectors, like the Fermi Large Area Telescope and the Alpha Magnetic Spectrometer, or by ground-based arrays like the High Altitude Water Cherenkov (HAWC) Observatory and the IceCube Neutrino Observatory. A detection of dark matter through cosmic messengers would not only confirm the existence of dark matter through a non-gravitational force, but also indicate the existence of physics beyond the Standard Model. I will discuss the important role gamma-ray observations play in multi-messenger searches, summarize the recent results, and discuss future prospects for the field.

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