

## **PUBLIC LECTURE**

*Tuesday 26 July 2016 18:15 (1h 30m)*

The ordinary atoms that make up the known universe, from our bodies and the air we breathe to the planets and stars, constitute only 5% of all matter and energy in the cosmos. The remaining 95% is made up of a recipe of 25% dark matter and 70% dark energy, both nonluminous components whose nature remains a mystery. Freese will recount the hunt for dark matter, from the discoveries of visionary scientists like Knut Lundmark and Fritz Zwicky, the astronomers who coined the term “dark matter” in the 1930’s, to the deluge of data today from underground laboratories, satellites in space, and the Large Hadron Collider. Theorists contend that dark matter consists of fundamental particles known as WIMPs, or weakly interacting massive particles. Billions of them pass through our bodies every second without us even realizing it, yet their gravitational pull is capable of whirling stars and gas at breakneck speeds around the centers of galaxies, and bending light from distant bright objects. In this talk Freese will provide an overview of this cosmic cocktail, including the evidence for the existence of dark matter in galaxies. Many cosmologists believe we are on the verge of solving this mystery and this talk will provide the foundation needed to fully fathom this epochal moment in humankind’s quest to understand the universe.

### **Summary**

### **Based on (arXiv number)**

**Presenter:** FREESE, Katherine (University of Michigan)