PHYSICS & ASTRONOMY COLLOQUIUM
UNIVERSITY OF WISCONSIN – STEVENS POINT

FRIDAY, May 4, 2012
2:00 PM Room A106 SCI

Dwight Luhman

Department of Physics, Carleton College

Superfluid Liquid Helium Films in a Disordered Environment

Dwight Luhman is an Assistant Professor in the Department of Physics and Astronomy at Carleton College. Since his arrival at Carleton in 2009 Dwight has been working with undergraduates to establish a laboratory of low temperature physics. Before coming to Carleton Dwight was a postdoctoral researcher at Princeton University. He received his PhD from the University of Massachusetts Amherst in 2006 and his BS from the University of Wisconsin-River Falls in 2001.

ABSTRACT: Helium is the only element that remains in the liquid state when cooled to the lowest achievable temperatures. As temperature is lowered the effects of thermal motion become less important allowing quantum mechanical properties to emerge. As a direct consequence of this, liquid helium at low temperatures becomes a superfluid characterized by the absence of viscosity in the liquid. Superfluidity even occurs in very thin liquid helium films, down to film thicknesses of several atomic layers. In this talk I will discuss the physics of superfluid helium and ongoing experiments investigating the phase transition from a normal fluid to a superfluid in thin helium films and how that transition is influenced by disorder. I will also show our most recent results characterizing the disorder in our system.

Faculty, staff and students are cordially invited to attend.
Refreshments will be served beginning at 1:45 pm