Abstract: Despite a relatively low superconducting transition temperature $T_c = 2.08$ K, the Zintl compound Mo$_3$Sb$_7$ has attracted much interest due to the possible involvement of magnetism in superconducting pairing, and promising thermoelectric performance with proper doping. Mo$_3$Sb$_7$ crystallizes in Ir$_3$Ge$_7$-type cubic structure with space group Im3m at room temperature. A structure transition from cubic to tetragonal (I4/mmm) was observed at $T_{\text{str}} = 53$ K and this symmetry lowering is accompanied by the opening of a 120 K spin gap. So Mo$_3$Sb$_7$ provides an interesting platform to study the interplay between structural anomaly, magnetism, and superconductivity. In this seminar, I will present the crystal growth, intrinsic physical properties of Mo$_3$Sb$_7$, and how chemical and hydrostatic pressures disturb the complex interplay between structure, magnetism, and superconductivity. The role of magnetism will be discussed based on thermal conductivity change across $T_c$ and the pressure dependence of $T_c$ and $T_{\text{str}}$.

**Time:** 2:00 pm, Tuesday, 2014.6.24  
**Location:** Physics Building, Room 221B  
(Cookies and coffee are served from 1:30 pm)