Phonon Dynamics in Carbon Nanotubes ARUN BODAPATI, PAWEL KEBLINSKI, Rensselaer Polytechnic Institute, PATRICK SCHELLING, University of Central Florida — Using vibrational mode analysis of pristine and defected carbon nanotubes we will demonstrate that defects cause a change in the spatial extension and polarization of phonons leading to a consequent loss of their ballistic nature. Furthermore, to gain a more detailed understanding of thermal energy flow in defected carbon nanotubes we use molecular dynamics simulation to investigate scattering of well-defined phonon wave-packets either by structural defects or by other phonons. The dependence of scattering of longitudinal and transverse acoustic phonons on their wavelengths will be also discussed.