

Spring 2014 COLLOQUIUM SERIES
GRANULAR AND MULTIPHASE FLOWS

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March 12, 2014
2:30 – 4:00 p.m.
Mechanical Engineering Center – Room 221

**When Size Doesn't Matter – Density- and Inelasticity-Induced
Segregation in Vibrated Granular Systems**

The tendency of granular mixtures to spontaneously segregate or ‘de-mix’ when exposed to an energy source is a well-known yet incompletely understood phenomenon with significant impact in various industrial applications. Although much research has been conducted regarding the segregation of differently *sized* particles, the roles of differing particle densities and elasticities have received comparatively little attention. This talk illustrates the considerable influence that such disparities in density and elasticity may exert on the behaviour of granular systems, and systematically analyses the ranges of parameter space for which elasticity effects may be neglected, and when they cannot be ignored.

Kit Windows-Yule is a doctoral researcher at the University of Birmingham in the UK. His research primarily concerns the dynamics of vibrofluidised granular beds and in particular the segregative behaviours of bidisperse and polydisperse systems. Kit’s research involves a combination of experiment and simulation; his experimental work utilises the University of Birmingham’s state of the art Positron Emission Particle Tracking facility, while his simulation work is performed using the MercuryDPM discrete particle method code, as part of an ongoing collaboration with the University of Twente.
