

20th annual Northeastern Granular Materials Workshop

Friday, June 7th, 2024

Department of Physics, College of the Holy Cross

Schedule

8:45 – 9:30 AM	Meet-and-greet, refreshments	
	Session 1 Chair: Ryan Kozlowski	
9:30 – 9:35 AM	Opening remarks and welcome	
9:35 – 10:15 AM	<i>Clogging and intermittency in microfluidic and hopper flows</i>	Sara Hashmi
10:15 – 10:30 AM	<i>Cornerstones are the Key Stones: Studying Granular Clogging with Machine Learning as an Experimental Guide</i>	Sam Dillavou
10:30 – 10:45 AM	<i>Stochastic dynamics of granular hopper flows: slow configurational modes control the stability of clogs</i>	David Hathcock
10:45 – 11:00 AM	Coffee break	
	Session 2 Chair: Narayanan Menon	
11:00 – 11:40 AM	<i>Mechanical response in jammed materials: From local structure to control theory</i>	Erin Teich
11:40 – 11:55 AM	<i>The hysteresis and irreversibility transitions in cyclicly sheared amorphous solids</i>	Craig Maloney
11:55 AM – 12:10 PM	<i>Descent of Single and Pairwise Intruders in Vibrated Gas-Fluidized Granular Materials</i>	Christopher Boyce
12:10 – 1:10 PM	Lunch	
	Session 3 Chair: Kerstin Nordstrom	
1:10 – 1:50 PM	<i>Rigidity and failure in granular materials: from the particle to the bulk scale</i>	Karen Daniels
1:50 – 2:05 PM	<i>Designing the pressure-dependent shear modulus using tessellated granular metamaterials</i>	Dong Wang

2:05 – 2:20 PM	<i>Jamming on Deformable Surfaces</i>	Timothy Atherton
2:20 – 2:25 PM	Break / table talk preparation	
	Table talks	
2:25 – 3:25 PM	Robin Burton: <i>Rotating Intruders in Dense Granular Beds</i> Levi Cass: <i>Granular Flow within a Quasi-2D Hopper in the Presence of Symmetrical and Asymmetrical Angled Orifice Boundaries</i> William Hobson-Rhoades: <i>Understanding the Change in Ductility of a Granular Raft under Small Amplitude Oscillatory Deformation</i> Sohum Kapadia: <i>Entanglement and localization of active filaments in a square well</i> Emile Kraus: <i>The Marine Sponge Cliona celata as a living, granular metamaterial</i> Arshad Kudrolli: <i>Magnetoelastic robots in sand</i> Lori McCabe: <i>Switching Flows in a 2D Silo</i> Stephanie McNamara: <i>Preliminary Work with OrganoMercury-Free Photoelastic Particles</i> Amir Nazemi: <i>Understanding the Propulsion of a Scallop-like Swimmer in Granular Media</i> Evan Willmarth: <i>Discrete Eshelby Inclusions in Amorphous Solids</i> Chetan Yadav: <i>Effects of Activity on approaching Glassiness</i> Yating Zhang: <i>Hindered stokesian settling of discs and rods</i> Tejas Dethé: <i>Group Representation Theory for Elastic (possibly Granular?) Metamaterials</i> Mary Reiter: <i>Granular electrostatic formations with peeled tape</i>	
3:25 – 3:30 PM	Break / table talk take-down	
	Session 4 Chair: Arshad Kudrolli	
3:30 – 3:45 PM	<i>Elastocapillary Adhesion of Soft Gel Microspheres</i>	Katharine Jensen
3:45 – 4:00 PM	<i>Large deformation DEM powder compaction simulations using a mechanically-derived contact model for adhesive elastic-plastic particles</i>	William Zunker
4:00 – 4:40 PM	<i>Some new methodologies in continuum modeling of granular flow</i>	Ken Kamrin
4:40 – 4:45 PM	Concluding remarks	