

# The 42<sup>nd</sup> Midwest Universities Fluid Mechanics Retreat

## MUFMECH 2015

April 9-11, 2015  
Geneva Center, Rochester, Indiana

### PROGRAM



----- Thursday April 9 -----

5:30pm – 11:00pm **Arrival & Registration.**  
**Evening social gathering with snacks and beverages provided.**

----- Friday April 10 -----

7:30 – 8:10 **BREAKFAST**

#### Session I (Friday Morning)

*Chair: B. Schulz KOTGOF: S. Williams*

Talk	Time	Authors	School	Title
0	8:10	R. Ewoldt	UIUC	Opening Remarks
1	8:20	T. Juliano	ND	Large Hypersonic Quiet Tunnel at the University of Notre Dame
2	8:50	A. Merat, T. Liu, H. Makhmalbaf, C. Fajardo, P. Merati	WMU	Optical flow vs Cross-Correlation in PIV
3	9:10	S. Wereley, A. Mishra	Purdue	Background oriented Schlieren for tracking interfaces and projectiles
4	9:30	R. Deegan	Michigan	Vortex shedding in splashing
5	9:50	B. Blackwell, R. Ewoldt	UIUC	Droplet impact on permeable meshes with yield stress fluids

10:00-10:20 **COFFEE**

#### Session II (Friday Morning)

*Chair: J. Foss KOTGOF: K. Tajiri*

Talk	Time	Authors	School	Title
1	10:30	G. Li, A. Ardekani	Purdue	Dynamics of particle migration in a channel flow of viscoelastic fluids
2	10:50	W. Mitchell, S. Spagnolie	UW-Madison	Glancing, reversing, wobbling, and sliding: the adventures of a spheroidal particle in a wall-bounded viscous flow
3	11:10	J. Koch, D. Lange, R. Ewoldt	UIUC	On the removal of air bubbles from fresh concrete by vibration
4	11:30	Y. Tang, T. Wu, D. Qi	WMU	Sedimentation of suspensions of a thousand of flexible fibers
5	11:50	B. King	Louisville	Fluid flow across a membrane drives phase change in carbon nanotube suspensions

12:10-1:30 **LUNCH** Steering Committee Meeting

### Session III (Friday Afternoon)

Chair: T. Juliano KOTGOF: R. Ewoldt

Talk	Time	Authors	School	Title
1	1:30	J. Wang, K. Wang, M. Wang	ND	Computation of noise generation by a rotor in grid turbulence using large-eddy simulation
2	1:50	C. Boone, M. Fuest, A. Conlisk, S. Prakash	The OSU	Current Switching in a Nanofluidic Field Effect Device
3	2:10	K. Tajiri	MichTech	Convective Mass Transfer in Proton Exchange Membrane Fuel Cells
	2:30 – 3:10ish	<i>Multiple contributions</i>		Sound Bite Presentations (Maximum 4 minutes & 3 slides each)

3:10ish-5:30 **R & R, Group Photograph, Table Tennis, ...**

5:30-6:30 **DINNER**

### Session IV (Friday Evening)

Chair: S. Wereley KOTGOF: E. Johnsen

Talk	Time	Authors	School	Title
1	6:30	H. Makhmalbaf, T. Liu, P. Merati	WMU	Experimentally Simulated Geophysical Vortical Flow
2	6:50	D. Barrent	MSU	Controlled Diffusion Blade Axial Fan: Study of Blade Interactions
3	7:10	V. Ramasamy, T. Liu	WMU	Wind Oscillator for Power Generation
4	7:30	C. Petty	MSU	Coriolis-Induced Redistribution of Turbulent Kinetic Energy and Atmospheric Scintillations: A Clue for Bird Orientation and Navigation?
5	7:50	T. Bao	MichTech	Preliminary study on exploring mine water as a geothermal resource

8:15-11:00 **Evening Social Gathering at Butler Lodge**

----- Saturday April 11 -----

7:30-8:15      **BREAKFAST**

**Session V (Saturday Morning)**

*Chair: C. Petty    KOTGOF: I. Wichman*

<b>Talk</b>	<b>Time</b>	<b>Authors</b>	<b>School</b>	<b>Title</b>
1	8:30	B. Patterson	Michigan	Numerical simulations of ultrasound-lung interaction
2	8:50	C. Zhang	MichTech	Contact angle of soil minerals: a molecular dynamics study
3	9:10	V. Velasco	Louisville	Monitoring Endothelial Cell Behavior Induced by Laminar Shear Stress
4	9:30	K. Rangharajan, A. Conlisk, S. Prakash	The OSU	Transport Mechanisms of Circulating Tumor Cells in Microfluidic Devices
5	9:50	C. Palma	Michigan	Experimental study of light-induced fluid motion -- the photo-electrowetting effect

10:10-10:30    **COFFEE**

**Session VI (Saturday Morning)**

*Chair: P. Merati    KOTGOF: A.T. Conlisk*

<b>Talk</b>	<b>Time</b>	<b>Authors</b>	<b>School</b>	<b>Title</b>
1	10:30	A. Mirhashemi, J. Szczudlak, S. Morris	ND	Accelerating multi-scale grid turbulence measurements at 700 degrees F
2	10:50	A. Validi	MSU	Numerical Simulation of Turbulent Jet Ignition and Combustion
3	11:10	S. Pan, E. Johnsen	Michigan	Bulk viscosity effects on decaying compressible turbulence
4	11:30	I. Wichman	MSU	Evolving Flow and Flame Pattern in a Constant Volume Rectangular Chamber in Premixed Combustion
5	11:50	Y. Guan, S. Morris	ND	The Unsteady Surface Pressure over A Family of Asymmetrical Beveled Trailing Edges

12:10-12:15    **CLOSING**

12:10-1:30pm    **LUNCH**