

The 43rd Midwest Universities Fluid Mechanics Retreat

MUFMECH 2016

April 7-9, 2016
Geneva Center, Rochester, Indiana

PROGRAM



----- Thursday April 7 -----

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

----- Friday April 8 -----

7:30 – 8:10 **BREAKFAST**

Session I (Friday Morning)

Chair: W. Schultz KOTGOF: C. Wark

Talk	Time	Authors	School	Title
0	8:10	C. Wark	IIT	Opening Remarks
1	8:20	C. Petty	MSU	Giant hydrodynamic fluctuations in the space station: a redistribution of turbulent kinetic energy by Coriolis Acceleration?
2	8:40	T. Liu	WMU	Skin-friction structures extracted from surface pressure gradient fields
3	9:00	M. Rahman	Louisville	Viscous or inertial effects: what determines the flow at the initial regime of drop coalescence
4	9:20	B. Blackwell A. Wu R. Ewoldt	UIUC	Yield-stress fluid drop impact on heated surfaces
5	9:40	K. Rangharajan, T. Conlisk S. Prakash	TOSU	Quantifying Importance of Ionic Components in Multi-component Electrolytes in Nanofluidics

10:00 - 10:30 **COFFEE**

Session II (Friday Morning)

Chair: J. Foss KOTGOF: A. Naguib

Talk	Time	Authors	School	Title
1	10:30	S. Wang A. Ardekani	Purdue	Settling dynamics in a linearly stratified fluid
2	10:50	P. Kozak D. Rempfer	IIT	Feedback Control of Blade-Pitch for Vertical-Axis Wind Turbines
3	11:10	L. Chamorro A. Hamed	UIUC	On the turbulence over geophysical-scale topographies
4	11:30	B. Worthman D. Dowling	Michigan	High frequency acoustic source localization in the shallow ocean
5	11:50	K. Roche A. Li D. Duan A. Aubeneau A. Packman	Northwestern	Turbulence-driven exchange of surface and groundwaters in rivers

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

Session III (Friday Afternoon)

Chair: R. Ewoldt KOTGOF: P. Merati

Talk	Time	Authors	School	Title
1	1:30	E. Akbari K. Rangharajan S. Prakash J. Song	TOSU	A Microfluidic Model to Direct Angiogenesis with Fluid Mechanics at Vessel Bifurcation
2	1:50	J. Yuan U. Piomelli	MSU	Simulations and prediction of realistic roughness effects in wall-bounded turbulent flows
3	2:10	K. Sharp	Louisville	A model for amyloid-beta clearance from the brain in Alzheimer's disease

2:30 –
3:10ish

*Multiple
contributions*

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: G. Wagner KOTGOF: S. Wereley

Talk	Time	Authors	School	Title
1	6:30	S. Gunasekaran A. Altman	UD	Relationship Between Wingtip Vortex, the Free Shear Layer and the Aerodynamic Efficiency
2	6:50	L. Xu R. Krasny S. Alben B. Schultz	Michigan	An efficient particle vortex method for vorticity dynamics in free space
3	7:10	S. Brueshaber	WMU	Accumulation of Polar Vorticity; Results from a Forced-Turbulence Shallow-Water Model.
4	7:30	Ali. Safaripour D. Olson A. Naguib M. Koochesfahani	MSU	Experimental generation of shear flows
5	7:50	G. Jaramillo S. Collicott	Purdue	New estimation of near exit <u>streamwise</u> instabilities on high speed liquid jets

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

----- Saturday April 9 -----

7:30 - 8:15 **BREAKFAST**

Session V (Saturday Morning)

Chair: C. Petty KOTGOF: S. Williams

Talk	Time	Authors	School	Title
1	8:30	S. Rimer	Michigan	Controlling Hazardous Releases While Protecting Passengers in Civil Infrastructure Systems
2	8:50	A. Mishra K. Gupta K. Clayton S. Wereley	Purdue	Particle Manipulation with a Computer Projector
3	9:10	Y. Lian	Louisville	Multiphase flow simulation using Moment of Fluid Method
4	9:30	T. Wu D. Qi	WMU	Simulations of deformable blockages in elastic blood vessel
5	9:50	K. Bellur	Michigan Tech	A new method to investigate evaporation and condensation of cryogenic propellants and determine accommodation coefficients

10:10 - 10:30 **COFFEE**

Session VI (Saturday Morning)

Chair: A. Ardekani KOTGOF: A.T. Conlisk

Talk	Time	Authors	School	Title
1	10:30	A. Maxson J. Watson J. Zakin	TOSU	Heat Transfer Enhancement in Turbulent Drag Reducing Surfactant Solutions by Agitated Heat Exchangers
2	10:50	P. Hammer M. Visbal A. Naguib M. Koochesfahani	MSU	Forces and flow structure of an airfoil pitching asymmetrically at high reduced frequency
3	11:10	X. Wang S. Alben C. Li Y.L. Young	Michigan	Stability of Piezoelectric Flags
4	11:30	G. Juarez	UIUC	Active oil-water interfaces: Buckling of oil droplets by confined bacterial growth
5	11:50	T. Juliano C. Huffman	Notre Dame	Notre Dame Hypersonic Wind Tunnel Temperature Optimization and Progress Update

12:10 - 12:15 **CLOSING**

12:15 - 1:00pm **LUNCH**