



The 36<sup>th</sup> Midwestern Universities Fluid Mechanics Retreat  
MUFMECH '09  
April 16-18, 2009  
Geneva Center, Rochester, Indiana

# PROGRAM

April 16, 2009

## 7:30-8:10 Breakfast

### Session I (Friday Morning)

Chair: C. Wark, KOTGOF: W. Schultz

Time	Speaker	School	Title
8:10	J. Foss	MSU	Opening Remarks: "The Frog Meeting Rules"
8:20	S. Paolucci M. Valorani	ND	The G-Scheme
8:40	R. Ranjan C. Pantano	UIUC	Direct Simulation of Turbulent Swept Flow Over a Wire in a Channel
9:00	L. Chen A.T. Conlisk	TOSU	Modeling of Electroosmotic Flow and DNA Translocation through a Nanopore
9:20	B. Monnier	IIT	Estimating Spatiotemporal Velocity Fields using Indirect Measurement Models Applied to a Wall Mounted Cube in a TBL
9:40	R. Nehe R. Basu A. Naguib M. Koochesfahani	MSU	Photochemistry of Tracers used for Molecular Tagging

## 10:00-10:20 Coffee Break

### Session II (Friday Morning)

Chair: P. Merati, KOTGOF: T. Conlisk

Time	Speaker	School	Title
10:20	K. Koppula A. Benard C. Petty	MSU	URAPS-Closure for the Normalized Reynolds Stress
10:40	M. Ross S. Morris	ND	Noise Generated by an Airfoil in a Single Stream Shear Layer
11:00	M. Kearney-Fischer M. Samimy	TOSU	Active Control of a Heated High Reynolds Number Mach 0.9 Jet Using Plasma Actuators
11:20	K. Zhang	MSU	Effect of Cavity Width on the Self-Sustained Oscillation in a Low-Mach Number Cavity Flow
11:40	N. Key	Purdue	Vane Clocking Effects in an Embedded Compressor Stage

## 12:00-1:20 Lunch

### Session III (Friday Afternoon)

Chair: R. Brodkey, KOTGOF: S. Morris

Time	Speaker	School	Title
1:20	A.T. Conlisk S. Datta W. Fissell S. Roy	TOSU	Biomolecular Transport Through Hemofiltration Membranes
1:40	J. Schmitz S. Morris	ND	Aerodynamics of Highly Loaded Low Pressure Turbines

2:00	K. Pathak A. Chandy A. Povitsky	Akron	Dynamics of Laser Ablated Plumes under Magnetic Field
2:20	A. Sinha M. Samimy	TOSU	Extremizing Feedback Control of a High-Speed and High-Reynolds-Number Jet
2:40	D.S. Stewart S. Yoo	UIUC	Modeling Solid State Detonation

**3:00-5:30R&R, Group Photograph, Ping Pong Open**

**5:30-6:30Dinner**

**Session IV (Friday Evening)**

*Chair: T. Corke, KOTGOF: (D.) S. Stewart*

<b>Time</b>	<b>Speaker</b>	<b>School</b>	<b>Title</b>
6:30	S. Wereley	Purdue	The Truth About Thermoelectrooptical Fluid Mechanics
6:50	D. Neal	MSU	A novel Experiment to Study the Effects of Rotation in Airfoil and Fan Flows
7:10	P. Mikrut S. Morris	ND	How to Measure Fluid Velocity and Structural Velocity at the Same Time
7:30	R. Knaus J. Oefelein C. Pantano	UIUC	Statistics and Modeling of the Scalar Dissipation and Its Relation to the Filtered Mixture Fraction
7:50	M. Koochesfahani	MSU	Microflow Imaging with Molecular Tagging Diagnostics

**8:10-11:00 Evening Social Gathering at Butler Lodge**

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**April 17, 2008**

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**7:30-8:10Breakfast**

**Session V (Saturday Morning)**

*Chair: N. Key, KOTGOF: A. Naguib*

<b>Time</b>	<b>Speaker</b>	<b>School</b>	<b>Title</b>
8:30	D. Qi	WMU	Optimization of Flexibility of Flapping Wing in Span Direction
8:50	B. Neiswander T. Corke	ND	Simulation and Experiments of Flow Separation in an Inter-Turbine Duct
9:10	S. Sarpotdar	IIT	Experimental Study of Cavity Noise Suppression using a Rod in Cross-Flow
9:30	B. Elbing	UM	Polymer Degradation within a High Reynolds Number Turbulent Boundary Layer
9:50	P. Merati C. Leong	WMU	Under-Hood Buoyancy Driven Flow

**10:10-10:30 Coffee Break**

**Session VI (Saturday Morning)**

*Chair: M. Koochesfahani, KOTGOF: S. Wereley*

<b>Time</b>	<b>Speaker</b>	<b>School</b>	<b>Title</b>
10:30	X. Chen S. Ghadiali	TOSU	Computational Modeling of Air-Liquid Flows in the Pulmonary System
10:50	S. Zhao A. Povitsky	Akron	Combined Molecular and Continuum Boundary Singularity Method for Filtration Nano-Scale Flows
11:10	J. Little M. Samimy	TOSU	High Lift Airfoil Separation Control with DBD Plasma Actuators
11:30	P. Slaboch S. Morris	ND	Control of the Flow Excited Helmholtz Resonator
11:50	T. Liu	WMU	Post-Stall Flow Control using Flexible Fin on Airfoil

**12:10-1:30 Lunch**