

## 2018 Research Symposium on Environmental and Applied Fluid Dynamics

Friday, May 25, 2018

The George Washington University, Lehman Auditorium, SEH B1220  
800 22<sup>nd</sup> Street NW, Washington, DC 20052

8:30am-9:00am	<b>BREAKFAST AND WELCOME</b> -- Professor Michael W. Plesniak (Chair, Mechanical & Aerospace Engineering)
9:05am-9:50am	Keynote Lecture: Kayo Ide (University of Maryland): "Observing System Design and Impact Assessment for Weather Prediction"

### TECHNICAL SESSION I - Session Chair: K. Bulusu (The George Washington University)

9:50am-10:10am	Abhilash Reddy Malipeddi (The George Washington University): "Hydrodynamic Collective Diffusion in Emulsions Under Shear Flow" (Prof. K. Sarkar)
10:10am-10:30am	Franziska Weber (University of Maryland): "A Sufficient Condition for the Kolmogorov 4/5 Law for Stationary Martingale Solutions to the 3D Navier-Stokes Equations" (Profs. Trivisa & Bedrossian).
10:30am-10:50am	Thomas O'Connor (Johns Hopkins University): "Extensional Flow and Molecular Structure of Entangled Polymers" (Prof. Mark Robbins)
10:50am-11:05am	<b>COFFEE BREAK</b>

### TECHNICAL SESSION II - Session Chair: M. Andre (The George Washington University)

11:05am-11:25am	Alexa Baumer (The George Washington University): "Analyzing the Mechanism for Successful Treatment of Cervical Insufficiency" (Prof. M. Leftwich)
11:25am-11:45am	Carl Shapiro (Johns Hopkins University): "A New Dynamic Wake Model for Control of Wind Farms" (Profs. C. Meneveau & D. Gayme).
11:45am-12:05pm	Alexi Nummelin (Johns Hopkins University): "Global Empirical Estimate of Horizontal Surface Ocean Diffusivity" (Prof. T. Haine).
12:05pm-12:25pm	Yun Yao Li (University of Maryland): "Deep Convective Transport and Wet Scavenging of Trace Gases" (Prof. K. Pickering).
12:25pm-1:30pm	<b>LUNCH BREAK</b>

### TECHNICAL SESSION III - Session Chair: N. Beratlis (The George Washington University)

1:30pm-1:50pm	Aaron Rips (Johns Hopkins University): "Exploiting Flow-Induced Flutter for Heat Transfer and Mixing" (Prof. R. Mittal).
1:50pm-2:10pm	Xiaoliang Zhang, (The George Washington University): "A Study of Three-Dimensional Magnetic Reconnection with a New Numerical Solver of Magnetohydrodynamics." (Prof. C. Liang).
2:10pm-2:30pm	Reza Jahanbakhshi, (Johns Hopkins University): "Nonlinear Instabilities in High-Speed Boundary Layers" (Prof. T. Zaki).
2:30pm-2:50pm	Siavash Toosi, (University of Maryland): "Grid-adaptation in Large Eddy Simulations" (Prof. J. Larsson).
2:50pm-3:10pm	Clara Helm (University of Maryland): "DNS/LES Data and Analysis of Mixing Layers at High Convective Mach Number" (Prof. P. Martin).
3:10pm-3:25pm	<b>AFTERNOON BREAK</b>

### TECHNICAL SESSION IV - Session Chair: A. Dhruv (The George Washington University)

3:25pm-3:45pm	Zhao Wu (Johns Hopkins University): "Detecting Turbulence in a Transitional Boundary Layer in the JHTDB" (Prof. C. Meneveau).
3:45pm-4:05pm	Ruben Rajos (University of Maryland): "Increasing Helicity to Achieve a Dynamo State on the Three Meter System" (Prof. D. Lathrop).
4:05pm-4:25pm	Huang Chen (Johns Hopkins University): "An Experimental Study on the Interactions of a Rotor Blade Tip Flow with Axial Casing Grooves and the Associated Stall Delaying Mechanism in an Axial Compressor" (Prof. J. Katz).
4:25pm-4:45pm	Martin Erinin, (University of Maryland): "Droplet Generation by a Plunging Breaker" (Prof. J. Duncan).
4:45pm-5:05pm	Mohammad Reza Najjari (The George Washington University): "Effects of Torsion on Pulsatile Flow Through a Curved Artery Model" (Prof. M. Plesniak).
5:05pm-6pm	<b>CLOSING RECEPTION</b>

(Faculty Advisors indicated in parentheses)