

Notes:



2014 Graduate Student/  
Post-Doctoral Symposium

Burgers Program for Fluid Dynamics/  
University of Maryland, College Park

Center for Environmental and  
Applied Fluid Mechanics/  
Johns Hopkins University



JOHNS HOPKINS  
Center for Environmental  
& Applied Fluid Mechanics

Department of Mechanical & Aero-  
space Engineering/  
George Washington University



THE GEORGE WASHINGTON UNIVERSITY  
SCHOOL OF ENGINEERING  
AND APPLIED SCIENCE

Wednesday May 28, 2014

Kay Boardroom of the Jeong H. Kim  
Building (Rooms 1107 & 1111)  
University of Maryland, College Park  
College Park, MD 20742

Burgers Program for Fluid Dynamics  
4211 Computer & Space Sciences Building  
University of Maryland, College Park  
College Park, MD 20742



## Symposium Schedule

8:30 - 9 a.m. Breakfast

9 - 9:05 a.m. Welcome - Prof. James M. Wallace, University of Maryland, College Park

9:05 - 9:50 a.m. Keynote Lecture: Prof. Tamer Zaki [JHU], "Boundary layer transition beneath free-stream turbulence: Linear precursors of nonlinear breakdown"

### *Technical Session I*

*Session Chair: David Meichle*

9:50 - 10:10 a.m. Kenneth Pryor [UMD], "Toward the long-range prediction of severe convective windstorms" (Xin-Zhong Liang)

10:10 - 10:30 a.m. Stephen Jeffress [JHU], "A new method to infer sea-surface temperature anomaly dynamics from stochastic fluctuations" (Thomas Haine)

10:30 - 10:50 a.m. Benjamin Johnson [UMD], "Eddies can freshen the oceanic deserts" (James Carton)

10:50 - 11:05 a.m. Coffee break, room 1105

### *Technical Session II*

*Session Chair: Tarandeep Singh Kalra*

11:05 - 11:25 a.m. Vaughan Thomas [JHU], "Self-sustaining turbulence in a restricted nonlinear model" (Dennice Gayme)

11:25 - 11:45 a.m. Michael Wilczek [JHU], "Pressure Hessian and viscous contributions to velocity gradient statistics based on Gaussian random fields" (Charles Meneveau)

11:45 a.m. - 12:05 p.m. Krishna Kumar [GWU], "Subharmonic response from ultrasound contrast microbubbles for non-invasive pressure estimation" (Adviser K. Sarkar)

12:05 - 12:25 p.m. Cao Zhang [JHU], "Simultaneous measurements of 3D flow and wall deformation in a compliant wall turbulent channel flow" (Joe Katz)

12:25 - 12:45 p.m. Adam Sierakowski [JHU], "Fully resolving particulate flows" (Andrea Prosperetti)

12:45 - 1:30 p.m. Lunch break, room 1105

### *Technical Session III*

*Session Chair: Naeem Masnadi*

1:40 - 2 p.m. Antonio Posa [GWU], "The near wake of a fully appended submarine model" (Elias Balaras)

2 - 2:20 p.m. Andrew Lind [UMD], "Vortex shedding from airfoils in reverse flow," (Anya Jones)

2:20 - 2:40 p.m. Matthieu Andre [GWU], "Vortex pairing and air entrainment of instability waves on a high-speed liquid jet" (Philippe Bardet)

2:40 - 3 p.m. An Wang [UMD], "The impact of a breaking wave on a partially submerged cube," (Jim Duncan)

3 - 3:15 p.m. Afternoon break, room 1105

### *Technical Session IV*

*Session Chair: John Biddle*

3:15 - 3:35 p.m. Matt Harrington [UMD], "Particle scale 3D flow field, rotations, and segregation in granular flows" (Wolfgang Losert)

3:35 - 3:55 p.m. Andrew DeJong [GWU], "High-fidelity numerical models of vortex induced energy harvester," (Chunlei Liang)

3:55 - 4:15 p.m. Rodolphe Chabreyrie [GWU], "Why do mayflies change their gill kinematics as they grow?" (Elias Balaras)

4:15 - 4:35 p.m. Vijay Vedula [JHU], "Image based modeling of left ventricular flows" (Rajat Mittal)

4:35 - 4:55 p.m. Anush Krishnan [GWU], "Lift enhancement in flying snakes" (Lorena Barba)

5 - 6 p.m. Closing reception, room 1105  
Announcement of "Best Presentation" award

(faculty advisors indicated in parenthesis)