## School of Engineering & Applied Science

## 2023 Research Symposium on Center for Environmental 2023 Research Symposium on & Applied Fluid Mechanics Environmental and Applied Fluid Dynamics May 30, 2023 • Homewood Campus



THE GEORGE WASHINGTON UNIVERSITY

## Symposium Program

8:45am - 9:30am	BREAKFAST – Outside Hackerman Hall B-17
9:30am - 9:35am	WELCOME - Professor Tamer Zaki   Johns Hopkins University - Hackerman Hall B-17
9:05am - 9:50am	Keynote Lecture: Prof. Megan Leftwich The George Washington University - Mechanical and Aerospace Engineering Presents: "Locomotion and transitions of a sea lion inspired amphibious system: Biologic to Robotic."
TECHNICAL SESSION I - Session Chair: Diego Muriel Delgado	
10:10am - 10:30am	Chang Liu (UMD Adviser: Prof. James H. Duncan) "The Effect of Surfactants on Droplet Generation in a Plunging Breaker."
10:30am - 10:50am	Ayush Saraswat (JHU Adviser: Prof. Joseph Katz) "Reynolds stresses in tip leakage flows of axial compressors."
10:50am - 11:10am	COFFEE BREAK – Outside Hackerman Hall B-17
TECHNICAL SESSION II - Session Chair: Hanxun Yao	
11:10am - 11:30am	Anik Tarafder (GWU Adviser: Prof. Kausik Sarkar) "Numerical simulation of a rigid body interacting with a viscoelastic soft material in a viscous fluid."
11:30am - 11:50pm	Mostafa Aghaeijouybari (JHU Advisers: Profs. Rajat Mittal & Charles Meneveau) "Generalized Darcy-Forchheimer law for porous media flows including inertial redirection effects."
11:50pm - 12:10pm	Mohamed Mohsen Ahmed (UMD Adviser: Prof. Arnaud Trouve) "Simulations of Wildland Fire Spread in Idealized Fuel Beds at Flame Scale."
12:10pm - 12:30pm	Eirini Florou (GWU Adviser: Prof. Philippe Bardet) "Turbulence statistics in free surface turbulence."
12:30pm - 1:40pm	LUNCH BREAK - Outside Hackerman Hall B-17
TECHNICAL SESSION III - Session Chair: TBD	
1:40pm - 2:00pm	Kenta Kurosawa (UMD Adviser: Prof. Jonathan Poterjoy)  "Blending Gaussian and Non-Gaussian Data Assimilation for State Estimation with High-Dimensional Geophysical Models."
2:00pm - 2:20pm	Simon Toedtli (JHU Adviser: Prof. Tamer Zaki) "Spectral analysis of the nonlinear terms in stratified wall turbulence."
2:20pm - 2:40pm	David Russell (UMD Adviser: Prof. Kayo Ide) "A Data Assimilation System for Lake Erie Based on the Local Ensemble Transform Kalman Filter."
2:40pm - 3:00pm	Samvit Kumar (JHU Advisers: Profs. Gregory Eyink & Charles Meneveau) "Vorticity cascade and turbulent drag in wall-bounded flows."
3:00pm - 3:20pm	Sara Yousoufi (GWU Adviser: Prof. Elias Balaras) "Numerical Investigation of Subcooling Effects on Pool Boiling Heat Transfer."
3:20pm - 3:30pm	AFTERNOON BREAK – Outside Hackerman Hall B-17
TECHNICAL SESSION IV - Session Chair: TBD	
3:30pm - 3:50pm	Pompon Mputu Udipabu (UMD Adviser: Prof. Panagiotis Dimitrakopoulos) "Dynamics of Multiple Capsules in a Square Microchannel."
3:50pm – 4:10pm	Shiyong Tan (JHU Adviser: Prof. Rui Ni) "Dispersion, collision, and coalescence of bubbles in turbulence."
4:10pm - 4:30pm	Ibrahim Yildiran (GWU Adviser: Prof. Elias Balaras) "Intracardiac Flow Analysis of the Right Ventricle in Pediatric Patients with Repaired Tetralogy of Fallot."
4:30pm - 4:50pm	Roozbeh H Azami (GWU Adviser: Prof. Kausik Sarkar) "Time Evolution of Ambient Pressure Sensitivity of Microbubbles Subharmonic Response as a Function of Hydrostatic Pressure and the Filling Gas."
4:50pm - 6:00pm	CLOSING RECEPTION – Outside Hackerman Hall B-17
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