2022 Research Symposium on Environmental and Applied Fluid Dynamics
Friday, June 03, 2022
The George Washington University, Lehman Auditorium, SEH B1220
800 22nd Street NW, Washington, DC 20052

8:30am-9:00am	**BREAKFAST AND WELCOME** – **Professor Elias Balaras (Acting Chair, Mechanical & Aerospace Engineering)**
9:05am-9:50am	Keynote Lecture: Johan Larsson (University of Maryland): "Modeling and prediction of high-speed turbulent boundary layers"

TECHNICAL SESSION I - Session Chair: E. Florou (The George Washington University)

9:50am-10:10am	Roozbeh Hassanzadeh Azami (The George Washington University): "Microbubbles as ultrasound contrast agents: Effects of ambient pressure on signal production" (Prof. K. Sarkar)
10:10am-10:30am	Hema Choudhary (University of Maryland): "Foams with enhanced rheology for stopping bleeding" (Prof. Srinivasa R. Raghavan).
10:30am-10:50am	Yinghe Qi (Johns Hopkins University): "Fragmentation of Bubbles in Turbulence by Small Eddies" (Prof. Rui Ni)
10:50am-11:05am	**COFFEE BREAK**

TECHNICAL SESSION II - Session Chair: I. Yildiran (The George Washington University)

11:05am-11:25am	Charles Fort (The George Washington University): "Direct measurement of instantaneous wall shear stress in a turbulent channel" (Prof. P. Bardet)
11:25am-11:45am	Zeng Zhang (Johns Hopkins University): "Supervised and Unsupervised Deep Learning for Improving Sub-pixel Localization Accuracy in Echo-PTV" (Prof. J. Katz).
11:45am-12:05pm	Hannah Daley (University of Maryland): "Aircraft-based Mass Balance Approach to Determine Methane Fluxes in the Colorado DJ Basin, Fall 2021" (Prof. R. Dickerson).
12:05pm-12:25pm	Ruben Rojas (University of Maryland): "The search for an Earth-like magnetic dynamo in laboratory liquid sodium flows" (Prof. D. Lathrop).
12:25pm-1:30pm	**LUNCH BREAK**

TECHNICAL SESSION III - Session Chair: Nora Caroline Zalud (The George Washington University)

1:30pm-1:50pm	Girguis Sedky (University of Maryland): **"**Physics of gust response mitigation in open-loop pitching maneuvers" (Prof. A. Jones).
1:50pm-2:10pm	Elizabeth Gregorio, (The George Washington University): "Rip Entry" Investigation: Divers Manipulate The Air Cavity" (Profs. Lefwich/Balaras).
2:10pm-2:30pm	Sharun Kuhar, (Johns Hopkins University): "Computational Modeling Applied to Mixing and Digestion in the Stomach" (Prof. R. Mittal).
2:30pm-2:50pm	Yannis Kaminaris, (The George Washington University): "Secondary flows in turbulent boundary layers over rough walls" (Prof. E. Balaras).
2:50pm-3:10pm	Eirini Florou, (The George Washington University): "Time-resolved reconstruction of 3D liquid-gas interface" (Prof. P. Bardet).
3:10pm-3:25pm	**AFTERNOON BREAK**

TECHNICAL SESSION IV- Session Chair: Charles Fort (The George Washington University)

3:25pm-3:45pm	Ghanesh Narasimhan (Johns Hopkins University): **"**Modeling a Yawed Wind Turbine Wake in a Conventionally Neutral Boundary Layer" (Profs. D. Gayme & C. Meneveau).
3:45pm-4:05pm	Ziazhen Qiao (University of Maryland): "A Numerical Study of Interactions between Fluid and Deformable Solid using Level Set Formulations" (Prof. A. Riaz).
4:05pm-4:25pm	Mitchell Fowler (Johns Hopkins University): "A New LES Wall Model for Quasi- to Non-Equilibrium Conditions and its Applications" (Profs. C. Meneveau & T. Zaki).
4:25pm-4:45pm	Arjun B. Savel, (University of Maryland): "Modeling Lorentz drag in an ultra-hot Jupiter over a range of atmospheric parameters" (Prof. Eliza M.R. Kempton).
4:45pm-5:05pm	Pi-Yueh Chuang, (The George Washington University): "Modeling oil overland flow for pipeline risk management" (Prof. L. Barba).
5:05pm-5:25pm	Yifan Du, (Johns Hopkins University): "Evolutionary deep neural network and fluid dynamics applications" (Prof. T. Zaki).
5:25pm-6:30pm	**CLOSING RECEPTION**

(Faculty Advisors indicated in parentheses)