DisCoVor2023- Technical Program

Registration Desk Hours		
May 15	5:00 - 7:00 PM	Hotel Lobby
May 16	7:30-8:00 AM; 10-10:40 AM	

** Student Prize Eligible

Day 1 - May 16; Tuesday

8:00-8:25	Opening	
Session 1	Aero-Hydrodynamics - 1 Session Chair - Karen Mulleners	Author
8:25-8:45	**Invited -** Dissecting 3D Vortex Dynamics of Pitching Wings Using the Force and Moment Partitioning Method	Kenny Breuer
8:45-9:00	Force and velocity field fluctuations over static foils with surface roughness	Melike Kurt
9:00-9:15	A computationally-augmented wind tunnel with irrotational gust generation for low-speed aerodynamics	Diederik Beckers**
9:15-9:30	Prediction of transverse gust effects on airfoil vortex shedding and loads	Yi-Tsung (Joe) Lee**
9:30-9:45	Laminar separated wakes around tapered wings: direct numerical simulations and triglobal resolvent analysis	Jean Helder Marques Ribeiro**
9:45-10:00	LPT measurements around a hydrofoil close to the free surface	Laurent David
10:00-10:40	Coffee Break	
Session 2	Flow Control & Energy Harvesting Session Chair - Kenny Breuer	Author
10:40-11:00	**Invited** - Data-driven optimisation and control of pitching kinematics for vertical-axis wind turbine blades	Karen Mulleners
11:00-11:15	Feather-inspired High-lift Flow Control Device for Stall Mitigation	Ahmed K. Othman**
11:15-11:30	Interactions of a Synthetic Jet with a Turbulent Boundary Layer	John Farnsworth
11:30-11:45	Fluid-structure interaction between aerodynamic flows and phononic materials	Andres Goza
11:45-12:00	Energy Extraction Potential in a Dual Oscillating-Foil System	Bernardo L. R. Ribeiro**
12:00-12:15	Cycle-to-cycle variations in cross-flow turbine performance and flow fields	Abigale Snortland**
12:15-12:30	Flow-energy harvesting by two fully passive flapping foils in tandem	Hui Tang
Lunch	On your own	
2:30-3:30 PM	*Outdoor Activity - walk to Sawmill Reservoir*	2 miles; flat terrain
4:30 - 6:30 PM	Poster Session #1 & Reception	See Below
Dinner	On your own	

Day 2 - May 17; Wednesday

Session 3	Bio-Flight Session Chair - Fang-Bao Tian	Author
8:25-8:45	**Invited -** Passive pitching and aperiodicity in the wake of flapping flights	Sunetra Sarkar
8:45-9:00	Unsteady pitching moment of heaving membrane wings	Sonya Tiomkin
9:00-9:15	Surfing on Vortices: Bird flight and engineered wing responses to an unsteady vortex wake	Siyang Hao**
9:15-9:30	The influence of trailing edge shape on the time-averaged wakes of bio-inspired pitching panels	Justin King
9:30-9:45	Aerodynamics and inertial steering mechanisms in hummingbird's escape maneuver	Haoxiang Luo
9:45-10:00	Discovering optimal flapping wing kinematics using active deep learning	Baptiste Corban**
10:00-10:40	Coffee Break	
Session 4	Bio-Hydrodynamics Session Chair - Haoxiang Luo	Author
10:40-11:00	**Invited -** Kinematics, vortex dynamics and thrust estimation in swimming snakes	Ramiro Godoy-Diana
11:00-11:15	Parameterizing tail-first swimming in mosquito larvae	Karthick Dhileep**
11:15-11:30	Swimming in Interactions: Hydrodynamic Analysis of Fish Schools in Low-speed Flows	Alec Menzer**
11:30-11:45	Optimizing propulsive efficiency at stable positions of in-line schooling by unmatched kinematics	Tianjun Han**
11:45-12:00	Tip vortex dynamics in metachronal paddling: effects of varying number of paddles	Mitchell Ford**
12:00-12:15	Establishing upstream obstacle-wake-signal correlation in seal whisker array sensing using interpretable neural network	Xudong Zheng
12:15-12:30	Propulsive performance of oscillating plates with time-periodic flexibility	Daniel Floryan
Lunch	On your own	
2:30-6 PM	*Long Hike - Barney Ford Trail* https://www.alltrails.com/explore/trail/us/colorado/carter-park-to-moorestone-to-barney-ford-trail	4.2 miles; 830 ft. elevation gain
Dinner	On your own	

Day 3 - May 18; Thursday

Session 5	Vortex Dynamics - 1 Session Chair - Andres Goza	Author
8:25-8:45	**Invited** - Turbulence Interaction with Re-configurable Fractal Tree Canopies	Kourosh Shoele
8:45-9:00	Effect of Interstitial Vortex Shedding on Darcy-Forchheimer Law Predictions in High-Re Porous Media Flows	Mostafa Aghaei-Jouybari
9:00-9:15	Cluster-based predictive model for nonlinear dynamics	Nitish Arya
9:15-9:30	Dynamics of a flexible sheet interacting with the vortices in the wake of a cylinder forced to rotate	Yahya Modarres-Sadeghi
9:30-9:45	Vortex formation in an instationary rotating cylinder with barrier	Lyke van Dalen**
9:45-10:00	Starting vortex formation by a surging airfoil	Anushka Goyal**
10:00-10:40	Coffee Break	
Session 6	Aero-Hydrodynamics - 2 Session Chair - Daniel Floryan	
10:40-11:00	**Invited -** Effect of wing transients on the leading-edge vortex dynamics over a rotating wing	Vrishank Raghav
11:00-11:15	Effect of frequency on the hydrodynamic interactions between two pitching propulsors	Yuanhang Zhu
11:15-11:30	Leading Edge Vortex Interactions on Generic Multi-Swept Wing Configurations	Casey Fagley
11:30-11:45	Slow Your Roll (Up): Studying Dynamic Stall Development with Variable Density Experiments	Nick Conlin**
11:45-12:00	Wake Interference Effect on Large Amplitude Flapping of an Inverted Flexible Foil	Aarshana Parekh**
12:00-12:15	A systematic investigation into the effect of roughness on self-propelled swimming plates	Jonathan Massey**
12:15-12:30	Volumetric PTV/PIV measurements of a Turbulent Separation Bubble	Lou Cattafesta
Lunch	On your own	
2:30-3:30 PM	*Outdoor Activity*	
5:00- 7:00 PM	Poster Session #2	See Below
7:00-9:00 PM	Buffet Dinner	

Day 4 - May 19; Friday

Session 7	Vortex Dynamics - 2 Session Chair - Hui Tang	Author
8:25-8:45	**Invited** - A weak coupling between near-wall Eulerian solvers and a Vortex Particle-Mesh method for efficient simulation of 2D external flows	Grégoire Winckelmans
8:45-9:00	Schlieren Visualization of Flow around Square Cylinders in Tandem Arrangement at a Reynolds Number 2.0×103 in Compressible Flows	Miku Kasai**
9:00-9:15	Bursting on helical vortices with small radius-to-pitch ratios	Lingbo Ji**
9:15-9:30	Vortex Dynamics of Planar Flows at Extreme Reynolds numbers	Michail Chatzimanolakis**
9:30-9:45	Vortex Dynamics of Free-Falling Porous Plates and Discs in Discrete Transverse Gust	Chandan Bose
9:45-10:00	Leading-edge vortex dynamics of high-amplitude pitching swept wings	Alex Cavanagh**
10:00-10:15	The Influence of Controlled Spanwise Twisting on the UnsteadyForces and Vorticity Dynamics of a Flat Plate	Samik Bhattacharya
10:15-10:30	Third Generation of Vortex Definition and Identification	Yifei Yu**
10:30 - 10:45	Conclude	

4:30 - 6 PM, May 16	Poster Session 1	Presenter
	Active heaving and passive pitching of a foil in a wavy stream	Abdur Rehman**
	Vortex interactions between tandem oscillating foil turbines and optimal system kinematics	Eric Handy-Cardenas**
	Sound radiation from a wing hovering near a wall	Fang-Bao Tian
	Strouhal and Membrane Elasticity Effects on Bat Flight	Marin Lauber
	Experimental study on the development of wakes past perforated plates	Murilo M. Cicolin
	Side-by-side swimming: A building block for studying higher-complexity fish schools	Pedro Ormonde**
	Force models for a flapping foil under unsteady upstream conditions	Rodrigo Vilumbrales-Garcia**
	Modal Force Partitioning Method (mFPM) with Application to Aeroacoustic Noise from Rotating Wings	Suryansh Prakhar**
	Effects of Sweep Angle on Flow Over Seal Whisker Inspired Geometry	Trevor Dunt**
	Optimal waveform for fast synchronization of periodic airfoil wakes	Vedasri Godavarthi**
	Measuring the surface waves produced by a swimming snake	Vincent Stin**
	Vortex induced vibration of a seal whisker-like cylinder at different AOA	Xudong Zheng

4:30 - 6 PM, May 18	Poster Session 2	Presenter
	Effectiveness of Facemasks for Large Virtual Cohort of Population	Akshay Anand**
	Application of topological data analysis to vortex-dominated fluid flows	Alemni Yiran**
	Geometrical influence on decay rates of low-order azimuthal modes in axisymmetric wakes	Dylan Caverly**
	Unsteady propulsion: Application to windsurfing	Gauthier Bertrand**
	Experimental study on covert-inspired flow control using time-resolved flowfield measurements	Girguis Sedky
	Flow-induced-vibration control using superhydrophobic surfaces	Hui Tang
	Solidity and Length Scale Effects on Porous Disk Wind Turbine Wake Characteristics	John Kurelek
	Vortices and mechanics around the swimmer	Laurent David
	Generalizing the surface layer, modulation of turbulence eddies near surfaces	Samantha Sheppard**
	Wake-Induced Vibration of Flexible Cantilevers: Application to Vortex Sensing	Shayan Heydari**
	Aerodynamics of bat-inspired flapping wings	Sushrut Kumar**
	Influence of Vortex Wakes on Schooling Patterns in Fish	Ji Zhou**