Oral presentations on Thursday, September 21st, 2017

Plenary Session

Time	POB 2.302
Thurs. 12:10pm	*Volumetric Spline Parameterization for Isogeometric Analysis with Engineering Applications* Jessica Zhang
Thurs. 1:00pm	*Large-Scale Bayesian Inversion and the flow of the Antarctic Ice Sheet* Omar Ghattas

Session 1

Time	POB 2.402 Optimization and UQ A *Chairs: Tim Smith & Tom O'Leary-Roseberry*	POB 6.304 Numerical Methods & PDEs A *Chair: Brendan Keith*
Thurs. 2:05pm	*hIPPYlib: An Extensible Software Framework for Large-Scale Deterministic and Linearized Bayesian Inverse Problems* Villa, Umberto	
Thurs. 2:10pm		*High-order Relaxed Multirate Infinitesimal Step Methods for Multiphysics Applications* Sexton, Jean M.
Thurs. 2:30pm	*Identification of Minimum Power Dominating Sets in Re-Configurable Graph Networks* Smith, Logan	*IMEX HDG-DG: A coupled implicit hybridized discontinuous Galerkin and explicit discontinuous Galerkin approach for Euler systems* Kang, Shinhoo
Thurs. 2:50pm	*Hessian-based sampling for goal-oriented model reduction with high-dimensional parameters* Chen, Peng	*Higgs Boson Equation in the de Sitter Spacetime: Computational Results* Balogh, Andras
Thurs. 3:10pm	*Reconstruction of a Compactly Supported Contrast function In The Presence of a Background Random Medium* Borges, Carlos	*A generalized wavelet based grid-adaptive and scale-selective implementation of WENO schemes for conservation laws* Maulik, Romit

Session 2

Time	POB 2.402 Optimization and UQ B *Chairs: Tim Smith & Tom O'Leary-Roseberry*	POB 6.304 Numerical Methods & PDEs B *Chair: Brendan Keith*
Thurs. 3:40pm	*Multiscale Optimization Using Generalized Mortar Methods* Seidl, Tom	*The DPG Method for High Frequency Time-harmonic Wave Propagation Problems* Petrides, Socratis
Thurs. 4:00pm	*A PDE Constrained Optimization Approach to the Solution of the Stefan Problem* O'Leary Roseberry, Tom	*A DPG Approach to the Full Vectorial Transverse Mode Instability Model of Optical Laser Amplifiers* Nagaraj, Sriram
Thurs. 4:20pm	*Multiscale methods for filtering turbulent systems* Lee, Yoonsang	*Construction of h-refined finite element spaces with applications to multigrid algorithms* Capodaglio, Giacomo
Thurs. 4:40pm		*Fast algorithm in radiative transfer* Zhong, Yimin

Poster presentations on Thursday, September 21st, 2017 (5:30pm POB 6.102)

Amanbek, Yerlan - *Adaptive Numerical Homogenization for Upscaling Single Phase Flow and Transport*
Bhuiyan, Md Al Masum - *Dynamic Fourier process applied to the study of geophysical time series*
Dobrovolny, Hana - *Using mathematical models to estimate the ratio of infectious to non-infectious viral production of RSV*
Feng, Xinzeng - *Measuring the mechanical forces during cancer cell invasion using inverse-method traction microscopy*
Frank, Florian - *FESTUNG: Finite Element Simulation Toolbox for UNstructured Grids*
Gudoshnikov, Ivan - *Modelling and stabilization of quasistatic evolution of elastoplastic systems subject to periodic loading*
Guan, Li - *Impact of model-form-uncertainty of the simple susceptible-infectious-recovery epidemic models*
Henscheid, Nick - *Uncertainty Quantification for a Predictive Model of Chemotherapy Efficacy*
Islam, Md Rafiul - *Dynamics of the Emerging Fungal Pathogen Batrachochytrium salamandrivorans on the Eastern Newt*
Jarrett, Angela - *Improving the predictive ability of a mechanically coupled spatiotemporal model of breast cancer using patient specific MRI data*
Kazhyken, Kazbek - *dgswemv2: a modern c++ discontinuous Galerkin finite element solver*
Kim, Changho - *Stochastic Simulation Method for Reactive Microfluids under Thermal Fluctuations*
Le, Ellen - *Model Reduction via Domain Decomposition-based Methods for Large-Scale Inverse Problems*
Mankad, Het - *Perturbation Theory Applied to a Multiscale Mixed Method: A Parallel Algorithm*
Marvin, Brad - *A Bayesian Approach to Model Inadequacy*
Oyekole, Oyekola - *A second-order partitioned scheme for fluid-structure interaction problems*
Paranamana, Pushpi J. - *Hypersurface model of the fracture for nonlinear fluid flows*
Pinky, Lubna Jahan Rashid - *Modeling of Viral Coinfection in Human Respiratory Tract Using Stochastic Method*
Smith, Tim - *Dynamical Reconstruction of AMOC Variability at 34˚S*
Smith, Logan - *Identification of Minimum Power Dominating Sets in Re-Configurable Graph Networks*
Zhao, Xikai - *Accuracy of Adaptive Order WENO Schemes for Solving Conservation Laws*

Oral presentations on Friday, September 22st, 2017

Plenary Session

Time	POB 2.302
Thurs. 8:30am	*Multi-Resolution Geometric Modeling of the Mitral Heart Valve Leaflets* Micheal Sacks

Session 3

Time	POB 2.302 Numerical Methods & PDEs C *Chair: Federico Fuentes*	POB 2.402 CS & Data Science *Chair: Max Bremer*	POB 6.304 Biology A *Chair: Josh Chen*
Fri. 9:30am	*Discretely entropy stable discontinuous Galerkin methods* Chan, Jesse	*Performance Comparison of HPX vs. MPI+X Threading Models for Discontinuous Galerkin Finite Element Methods* Bremer, Max	*An in Silico Heart Model of Pulmonary Arterial Hypertension* Avaz, Reza
Fri. 9:50am	*Fractional-Parabolic Deformations With Sinh-Acceleration* Levendorskii, Sergei	*An Extended DEIM Algorithm for Subset Selection* Hendryx, Emily	*Uncertainty Quantification for a Predictive Model of Chemotherapy Efficacy* Henscheid, Nick
Fri. 10:10am	*High-order polygonal discontinuous Petrov-Galerkin (PolyDPG) methods using ultraweak formulations* Jaime Mora Paz	*Block-wise Implementation of the Kalman Filter Based Iterative Learning Control for MIMO Systems* Jayawardhana, Rangana	*Fluid-structure interaction modeling of bioprosthetic heart valves* Zakerzadeh, Rana
Fri. 10:30am	*Inexact hierarchical scale separation: A two-scale approach for linear systems from discontinuous Galerkin discretizations* Frank, Florian		*Simulating Bacterial Motility in Confined Environments* LaGrone, John

Plenary Session

Time	POB 2.302
Thurs. 11:00am	*Learning From Aggregated Data* Joydeep Gosh
Thurs. 1:10pm	*A New Hybrid RANS/LES Modeling Approach for Complex Turbulent Flows* Robert Moser

Session 4

Time	POB 2.302 Fluid Mechanics *Chairs: Gopal Yalla & Prakash Mohan*	POB 6.304 Geological and Structural Mechanics *Chairs: Tim Smith & Tom O'Leary-Roseberry*
Fri. 2:10pm	*Scaling of Lyapunov Exponents in Homogeneous Isotropic Turbulence* Mohan, Prakash	*Numerical Simulation of Carbonate Matrix Acidization Using Adaptive Enriched Galerkin Method with Entropy Residual Stabilization* Dong, Rencheng
Fri. 2:30pm	*Stochastic Simulation Method for Reactive Microfluids under Thermal Fluctuations* Kim, Changho	*Hypersurface model of the fracture for nonlinear fluid flows* Paranamana, Pushpi
Fri. 2:50pm	*Effective Boundary Conditions for Viscous Incompressible Flow Over Rough Boundaries* Carney, Sean	*Adaptive multiscale modeling of the flow and reactive transport using Numerical Homogenization and Enhanced Velocity Mixed FEM in porous media* Amanbek, Yerlan
Fri. 3:10pm	*A DG method for the coupled Navier-Stokes and Cahn-Hilliard equations* Liu, Chen	*Modelling and stabilization of quasistatic evolution of elastoplastic systems subject to periodic loading* Gudoshnikov, Ivan
Fri. 3:30pm	*Global stability of 2D plane Couette flow beyond the energy stability limit* Fuentes, Federico	

Plenary Session

Time	POB 2.302
Thurs. 4:00pm	*Isogeometric Analysis of Solids, Structures, and Fluid-Structure Interaction: From Early Results to Recent Developments* Yuri Bazilevs

Oral presentations on Saturday, September 23rd, 2017

Plenary Session

Time	POB 2.302
Thurs. 9:00am	*Personalized Blood Flow Simulations from an Image-Derived Model: Changing the Pradigm for Cardiovascular Diagnostics* Leo Grady

Session 5

Time	POB 2.302 Biology B *Chair: TBD*	POB 6.402 Numerical Methods & PDEs D *Chairs: Tom O'Leary-Roseberry & Brendan Keith*
Sat. 10:10am	*Magnetic drug targeting: a comparison between CFD and FSI simulations* Calandrini, Sara	*The Double Membrane Problem* Duque, Luis
Sat. 10:30am	*A biophysical model for tumor induced angiogenesis calibrated and validated with a murine model of glioma* Hormuth, David	*Isogeometric shape optimization on triangulations* Wang, Cunfu
Sat. 10:50am	*Cooperative Learning with Iterative Learning Control* Jayawardhana, Rangana	*Multilevel and Multigrid solvers for hybridized discontinuous Galerkin (HDG) methods* Muralikrishnan, Sriramkrishnan
Sat. 11:10am	*Two Possible Mechanisms of Chronic Viral Coinfections : Cellular*	*A New Discontinuous Galerkin Method for the Wave Equation With Background*

	Regeneration and Superinfection Pinky, Lubna Jahan Rashid	*Flow* Zhang, Lu
Sat. 11:30am	*Respiratory Control System Model During Exercise With Two Delays* Pradhan, Saroj P.	*New families of H(div) mixed finite elements on cuboidal hexahedra* Tao, Zhen
Sat. 11:50am	*Numerical simulation of deformability-based red blood cell separation in a microfluidic device* Kabacaoglu, Gokberk	*Goal-oriented adaptive mesh refinement with discontinuous Petrov–Galerkin methods* Keith, Brendan