FINAL SCHEDULE FOR DR17, July 9-10, Pittsburgh, PA

SUNDAY, JULY 9

9:00 – 9:10am Opening remarks

9:10 – 10:10am **Sufficient dimension reduction for large regression problems: basic notions and approaches to leverage known structure across predictors and observations**
Francesca Chiaromonte, Penn State University, USA

10:10 – 10:30am Coffee break

10:30 – 11:35am Session 1 *Inverse regression and basis adaptation*

10:30 – 10:50 **Inverse regression-based uncertainty quantification for high-dimensional models**
Weixuan Li, Pacific Northwest National Laboratory, USA; Guang Lin, Purdue University, USA; Bing Li, Penn State University, USA

10:52 – 11:12 **Enhancing the efficiency of compressive sensing with sliced inverse regression**
Xiu Yang, Weixuan Li, and Alexandre Tartakovsky, Pacific Northwest National Laboratory, USA

11:14 – 11:34 **Domain decomposition and basis adaptation for high dimensional stochastic partial differential equations**
Ramakrishnan Tipireddy, Panos Stinis, and Alexandre Tartakovsky, Pacific Northwest National Laboratory, USA

11:40 – 12:00pm Poster blitz

Discovering non-linear active subspaces using deep neural networks
Rohit Tripathy and Ilias Bilionis, Purdue University, USA

~~**Exploring active subspaces in neural network cost functions**~~
~~*Jonathan Helland* and Paul Constantine, Colorado School of Mines, USA~~

Optimal basis rotation for high-dimensional spatial field calibration
James Salter and Daniel Williamson, University of Exeter, UK

Computing errors and uncertainties on active subspaces
Pranay Seshadri, Cambridge University, UK; Paul Constantine, Colorado School of Mines, USA

Establishing design continuity in Pareto fronts with active subspaces
Zachary Grey and Paul Constantine Colorado School of Mines, USA

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Inverse regression for ridge recovery
Andrew Glaws and Paul Constantine, Colorado School of Mines, USA; Dennis Cook, University of Minnesota, USA

Data-driven polynomial ridge approximation using variable projection
Jeffrey Hokanson and Paul Constantine, Colorado School of Mines, USA

Dimensionality reduction for the chemical master equation
Midhun Kathanaruparambil Sukumaran and Brian Ingalls, University of Waterloo, Canada; Marc R. Roussel, University of Lethbridge, Canada

Parameter selection and reduction for optimizing parallel applications
Murali Emani, Lawrence Livermore National Laboratory, USA

12:00 – 1:30pm Lunch on your own
1:30 – 2:00pm Poster session 1
2:00 – 3:28pm Session 2 *Active subspaces*

2:00 – 2:20 **An initialization algorithm for gradient-free active subspace construction**
Kayla Coleman and Ralph Smith, North Carolina State University, USA; Brian Williams, Los Alamos National Laboratory, USA; Max Morris, Iowa State University, USA

2:22 – 2:42 **Learning a second-moment matrix without gradients**
Michael Wakin and Paul Constantine, Colorado School of Mines, USA; Armin Eftekhari, Alan Turing Institute, UK; Rachel Ward, University of Texas at Austin, USA; Ping Li, Rutgers University, USA

2:44 – 3:04 **Estimating active subspaces with randomized gradient sampling**
Farhad Pourkamali-Anaraki and Stephen Becker, University of Colorado Boulder, USA

3:06 – 3:26 **Modified active subspaces using the average of gradients**
Minyong Lee and Art Owen, Stanford University, USA

3:28 – 4:00pm Coffee break
4:00 – 5:28pm Session 3 *Bayesian inference*

4:00 – 4:20 **Bayesian inference on active subspaces**
Allison Lewis, Johns Hopkins University Applied Physics Laboratory, USA; Ralph Smith, North Carolina State University, USA; Brian Williams, Los Alamos National Laboratory, USA

4:22 – 4:42	**Gradient-based methods for certified dimension reduction in nonlinear Bayesian inverse problems** *Olivier Zahm* and Youssef Marzouk, Massachusetts Institute of Technology, USA; Tiangang Cui, Monash University, Australia; Kody Law, Oak Ridge National Laboratory, USA
4:44 – 5:04	**Multilevel sequential Monte Carlo with dimension-independent likelihood-informed proposals** *Kody Law*, Oak Ridge National Laboratory, USA
5:06 – 5:26	**Dimension reduction methods for remote sensing of methane profile** *Otto Lamminpaa*, Johanna Tamminen, Marko Laine, Simo Tukiainen, and Rigel Kivi, Finnish Meteorological Institute, Finland

MONDAY, JULY 10

9:00 – 9:10am	Opening remarks
9:10 – 10:10am	**Sloppy models and effective theories in physics, biology, and beyond** *Mark Transtrum*, Brigham Young University, USA
10:10 – 10:30am	Coffee break
10:30 – 11:35am	Session 4 *Applications*
10:30 – 10:50	**Sensitivity analysis For stochastic models Of biochemical reaction networks** *Monjur Morshed* and Brian Ingalls, University of Waterloo, Canada; Silvana Ilie, Ryerson University, Canada
10:52 – 11:12	**Active subspace analysis of chemical kinetic models for combustion** *Kyle Niemeyer*, Oregon State University, USA; Paul Constantine, Colorado School of Mines, USA
11:14 – 11:34	**Inherent limitations to parameter estimation in cancer incidence data: practical identifiability of multistage clonal expansion models** *Andrew Brouwer*, Rafael Meza, and Marisa Eisenberg, University of Michigan, USA
11:40 – 12:00pm	Poster blitz
	Offline-enhanced reduced basis method through adaptive construction of the surrogate parameter domain *Jiahua Jiang* and Yanlai Chen, University of Massachusetts Dartmouth, USA; Akil Narayan, University of Utah, USA

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Multifidelity augmented surrogates for uncertainty quantification with application to fusion plasmas
Varis Carey, University of Colorado Denver, USA; Robert Moser, University of Texas at Austin, USA; C.S. Chang, Princeton Plasma Physics Laboratory, USA
Simultaneous empirical interpolation and reduced collocation method for nonlinear steady-state PDEs
Chris Bresten and Yanlai Chen, University of Massachusetts Dartmouth, USA
Calculating transient neutron flux using the proper generalized decomposition
Anthony Alberti and Todd Palmer, Oregon State University, USA
Data-driven parameterization of the generalized Langevin equation
Huan Lei and Nathan Baker, Pacific Northwest National Laboratory, USA; Xiantao Li, Penn State University, USA
Model reduction for uncertainty quantification via Mori-Zwanzig formulaism
Jing Li and Panos Stinis, Pacific Northwest National Laboratory, USA
Multigrid-based optimization approach for tomographic reconstruction
Zichao Wendy Di, Sven Leyffer, and Stefan Wild, Argonne National Laboratory, USA
Detection of unusual input-output associations
Charmgil Hong, Siqi Liu, and Milos Hauskrecht, University of Pittsburgh, USA
Feature selection of support vector regression based on information theoretic criteria
Ryuei Nishii and Ryosuke Kikuyama, Kyushu University, Japan; Pan Qin, Dalian University of Technology, China

12:00 – 1:30pm Lunch on your own
1:30 – 2:00pm Poster session 2
2:00 – 3:28pm Session 5 *Beyond linear and global*

2:00 – 2:20 **Uniform sampling from a feasible set**
Michael Frenklach, Wenyu Li, Arun Hedge, James Oreluk, and Andrew Packard, University of California Berkeley, USA
2:22 – 2:42 **Multiscale dimension reduction of data concentrated near a low-dimensional manifold**
Stefano Vigogna, Wenjing Liao, and Mauro Maggioni, Johns Hopkins University, USA
2:44 – 3:04 **Reparameterization techniques and extensions to classes of variables**

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Zachary del Rosario, Aaron Towne, and Gianluca Iaccarino, Stanford University, USA

3:06 – 3:26 **Local active subspaces for dimension reduction**
Ahmad Rushdi, Mohamed Ebeida, Laura Swiler, and Eric Phipps, Sandia National Laboratories, USA

3:28 – 4:00pm Coffee break

4:00 – 5:28pm Session 6 *Model reduction and response surfaces*

4:00 – 4:20 **Interpolation of functions with parameter dependent jumps by transformed snapshots**
Gerrit Welper, University of Southern California, USA

4:22 – 4:42 **A generalized polynomial chaos algorithm accelerated by parametric random space dimension reduction**
Yanlai Chen and Jiahua Jiang, University of Massachusetts Dartmouth, USA; Akil Narayan, University of Utah, USA

4:44 – 5:04 **Compressed sparse tensor based approximation for vibrational quantum mechanics integrals**
Prashant Rai, Khachik Sargsyan, and Habib Najm, Sandia National Laboratories, USA

5:06 – 5:26 **Probabilistic coarse-graining: from molecular dynamics to stochastic PDEs**
Phaedon-Stelios Koutsourelakis, Markus Shoeberl, Constantin Grigo, Technical University of Munich, Germany; Nicholas Zabaras, University of Notre Dame, USA