Wednesday 3/25

07:30-08:30 Breakfast [Copper Conference Center]

08:00-10:05 Session 11A: Optimization Methods. Bighorn B. Bighorn B

08:00 Analysis of the sensitivity of output wave height to input bottom friction and bathymetry in the coastal wave model STWAVE
Daniel Reich Matthew Farthing, Tyler Hesser, Carl Kelley, Matthew Parno

08:25 Sparse trigonometric interpolation with applications to computational chemistry
Zack Morrow Miroslav Stoyanov, Chang Liu, C. T. Kelley, Elena Jakubikova

08:50 Regularized Non-linear Least-Squares Unconstrained Minimization Method for High-order Finite-Element Implicit Shock-Fitting in Space-Time
Robert Nourgaliev Andrew Corrigan, Andrew Kercher, Patrick Greene, Steven Wopschall

09:15 A Projected Newton-Krylov Method for Large-Scale Bound-Constrained Optimization Problems
Kelvin Kan Samy Wu Fung, Lars Ruthotto

09:40 Energy Function Approach to the Time-Varying Optimal Gas Flow
Aleksandr Lukashevich Yury Maximov, Michael Chertkov

08:00-10:05 Session 11B: Low-rank methods. Bighorn C/1. Bighorn C/1

08:00 Krylov Methods for Low-Rank Regularization
Chang Meng Silvia Gazzola, James Nagy

08:25 A Low-Rank Solver for the Unsteady Navier-Stokes Equations
Howard Elman Tengfei Su

08:50 Low-rank plus sparse matrices: ill-posedness and guaranteed recovery
Jared Tanner Simon Vary

09:15 A low-rank matrix equation method for solving PDE-constrained optimization problems
Alexandra Buenger Valeria Simoncini, Martin Stoll

09:40 Randomized Iterative Methods for Low Rank Matrix Approximation
Azzam Allan Struthers, Benjamin Ong

08:00-10:05 Session 11C: Multigrid Algorithms and their Performance on GPU Platforms. Bighorn C/2. Bighorn C/2

08:00 Algebraic Multigrid Methods for Large-Scale Electromagnetic Particle-in-Cell Simulations
Jonathan Hu Christian Glusa, Paul Lin, Matt Bettencourt, Edward Phillips

08:25 MueLu's SA-AMG implementation and performance on GPUs
Luc Berger-Vergiat Jonathan Hu, Christian Glusa, Christopher Siefert

08:50 One-Reduce FGMRES-AMG with Two-Stage Gauss-Seidel Smoothers on GPU
Kasia Swirydowicz Stephen Thomas, Ichitaro Yamazaki, Julien Langou, Daniel Bielich

09:15 Recent Development of Multigrid Solvers in HYPRE on Modern Heterogeneous Computing Platforms
Robert Falgout Ruipeng Li, Bjorn Sjogreen, Ulrike Yang

09:40 Robust Structured Multigrid on GPUs: Leveraging legacy kernels in the Cedar Framework
Andrew Reisner David Moulton, Luke Olson

10:05- 10:25 Coffee \& Tea Service

10:25-12:30	Session 12A: Multilevel Methods. Bighorn B Bighorn B	10:25-12:30	Session 12B: Data Science and Graph Algorithm Applications. Bighorn C/1 Bighorn C/1	10:25-12:30	Session 12C: Nonlinear Problems. Bighorn C/2 Bighorn C/2
10:25	p-Multigrid with Partial Smoothing: An Efficient Preconditioner for Discontinuous Galerkin Discretizations with Modal Bases **Christopher Thiele** Beatrice Riviere	10:25	Iterative Solution Methods for Nonnegative Matrix Factorizations **Matthias Bollhoefer**	10:25	A Rational Approximation Method for Large-Scale Nonlinear Eigenvalue Problems **Agnieszka Miedlar** Mohamed El-Guide, Yousef Saad
10:50	Non-overlapping block smoothers for the Stokes equations **Lisa Claus** Matthias Bolten	10:50	A Multilevel Subgraph Preconditioner for Linear Equations in Graph Laplacians **Junyuan Lin** Xiaozhe Hu	10:50	Nonlinear Solvers for Two-species Neutrino-matter Equations in Core-Collapse Supernovae Simulations **Paul Laiu** Eirik Endeve, Austin Harris, Ran Chu
11:15	Expressing AMG Interpolation in Terms of Sparse Matrix-Matrix Multiplications **Rob Falgout** Ruipeng Li, Bjorn Sjogreen, Ulrike Yang	11:15	Parallel spectral partitioning on multiple GPUs **Erik G. Boman** Seher Acer, Siva Rajamanickam	11:15	Optimal Asymptotic Convergence Rates for Nesterov and Anderson Acceleration with Application to Tensor Decomposition **Yunhui He** Hans De Sterck
11:40	Parallel-in-time simulation of biofluids **Weifan Liu** Minghao Rostami	11:40	Mixed-Precision Arithmetic for Graph Clustering and Graph Ranking **Lucia Yang** Alyson Fox, Geoffrey Sanders	11:40	A new quasi-Newton method for a black-box system with a physics-based surrogate **Toon Demeester** E. Harald van Brummelen, Rob Haelterman, Joris Degroote
12:05	—	12:05	Computing a posteriori error estimates for algebraic multigrid methods on graphs **Xiaozhe Hu** Kaiyi Wu, Ludmil Zikatanov	12:05	—

16:00- 16:30 **Coffee \& Tea Service**

16:30- 18:10 **Session 13: Student Paper Awards and Presentations. Plenary Session Bighorn B** Bighorn B

16:30 BiLQ: An Iterative Method for Nonsymmetric Linear Systems with a Quasi-Minimum Error Property
Alexis Montoison Dominique Orban

16:55 Predict-and-recompute Conjugate Gradient Variants
Tyler Chen

17:20 Optimizing MGRIT and Parareal coarse-grid operators for linear advection
Oliver Krzysik Hans De Sterck, Robert Falgout, Stephanie Friedhoff, Scott MacLachlan

18:30 - 19:00	**Cash Bar at Grand Hall- Copper Station**	Bighorn B
19:00 - 21:30	**Conference Banquet Grand Hall- Copper Station**	