

OpenACC. Project Period: 2016-2017  
URL: <https://github.com/UD-CRPL/ASHES-17>

## Tutorials Presented at Conferences

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- Tutorial on Towards Comprehensive System Comparison: Using the SPEC HPG Benchmarks for Better Analysis, Evaluation, and Procurement of Next-Generation HPC Systems given at:
  - Half-day Tutorial at The International Conference for High Performance Computing, Networking, Storage, and Analysis, (SC20) Virtual, Nov 2020
  - Practice and Experience in Advanced Research Computing (PEARC'19), Chicago, IL, USA
  - Half-day Tutorial at ICS 2019: International Conference on Supercomputing, (ICS'18), Phoenix, AZ, USA
  - Half-day Tutorial at ISC 2019: International Supercomputing Conference (ISC'18), Germany, Frankfurt
  - Half-day Tutorial at The International Conference for High Performance Computing, Networking, Storage, and Analysis, (SC'15), Austin, TX, USA

## Invited Technical Talks

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2022

- Keynote at IPDRM Workshop @ SC22 Challenges and success stories migrating software and applications to Frontier, November 2022
- ECP SOLLVE at the DOE booth SC22
- The Race to Frontier, Stony Brook University, Sept 2022
- Preparing Effective Grant Proposals – University resources, Early Career Program at SC22
- The good, bad and the ugly with PIconGPU on Frontier, talk at AMD
- Preparing the PIconGPU for the next-generation computing systems, BNL, Jan 2022

2021 (Virtual talks)

- Experience with porting and scaling codes on AMD GPUs, first PaCER Conference – P'con, Dec 2021
- How Ready Are We to Use the First Exascale Supercomputer, Frontier?, DOE ECP Booth, November 2021
- Best practices for a productive (yet performance) software development, 2021 Europe ACM Summer School, Aug 2021
- An HPC Journey – Porting a Solar Physics Code to Large Scale Systems, The Society of HPC Professionals, July 2021
- Ten ways to build a productive (yet a performant) software, Supercomputing Frontiers Europe, July 2021

- Programming Frontier, challenges and solutions, OLCF User Group meeting, June 2021
- Present and the future of Accelerated Computing Programming Approaches, Panelist for NVIDIA GPU Technology Conference (GTC), March 2021
- Exascale Simulations for the Next Generation of Plasma Accelerators with PIconGPU, SIAM CSE 2021, Feb 2021
- Preparing to program the world's fastest supercomputer, NSF-funded DARWIN system Symposium, UDEL, Feb 2021

## 2020 (Virtual talks)

- Evolution of a Project, Talk at the Students at the Supercomputing Conference (SC) program, Nov 2020
- Hierarchical Parallelism for Exascale Computing (HiPar20 at Supercomputing Conference (SC), Panelist, Nov, 2020
- Developing Software for today's and tomorrow's platform - fun or a nightmare, Invited talk by Prof. Michela Taufer at the UTK Seminar Series, UTK, Oct 2020
- Research Activities at CRPL. Hierarchical Computations on Manycore Architecture Group at KAUST, Saudi Arabia, Aug 2020
- Preparing Software Stack for the Next Generation Systems - An opportunity or a nightmare?, Thirteenth International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2) in conjunction with ICPP 2020, Aug 2020
- Scientific Software Productivity - Case Studies, Challenges, Opportunities and Potential Solutions, 2020 Collegeville Workshop on Scientific Software: Panel on productivity definitions and challenges, July 2020
- ECP SOLLVE, OpenMP Validation and Verification Effort, OpenPOWER Academia and Research Webinar, June 2020
- GPUs for Science Day 2020, NERSC (National Energy Research Scientific Computing Center), Lawrence Berkeley National Laboratory in Berkeley, California, June 2020
- Training and Best Practices to Develop Portable Yet Performant Code, Seattle, February, Society for Industrial and Applied Mathematics, Parallel Processing (SIAM PP), Seattle, USA, Feb 2020 (In person)

## 2019

- Running PIconGPU on Summit. CAAR: Preparing PIconGPU for Frontier at ORNL, 4th OpenPOWER Academic and Research Workshop, Denver, USA, Supercomputing Conference (SC), Nov 2019
- OpenMP 4.5 Validation and Verification Test suite, 4th OpenPOWER Academic and Research Workshop, November, Denver, USA, Supercomputing Conference (SC), Nov 2019
- Applying directives to port MURaM code to heterogeneous systems, ASTRONUM, Paris, France, July, 2019
- Development of a parallel algorithm for WGS alignment for rapid delivery of personalized genomics, PASC Minisymposium, Zurich, Switzerland, June 2019
- Impact of parallel programming models on interdisciplinary scientific research, University of Basel, Basel, Switzerland, June 2019

- OpenACC-Based GPU Acceleration of Chemical Shift Prediction, GPU Technology Conference (GTC), Invited featured speaker, CA, USA, Mar 2019
- Porting MURaM (Max Planck University of Chicago Radiative MHD) to GPUs Using OpenACC, GPU Technology Conference (GTC), Invited speaker, CA, USA, March 2019
- Acceleration of Prediction of Chemical Shift Structures, SIAM CSE, Spokane, USA, Feb, 2019

## 2018

- Development of a parallel algorithm for whole genome alignment for rapid delivery of personalized genomics. NSF-funded International workshop Big Data and Extreme-Scale Computing (BDEC) Meeting, Indiana University, Bloomington, USA, Nov, 2018
- 3P to Science using OpenACC: Performance, Productivity, and Portability. NVIDIA Booth at the SC showfloor. Dallas, Nov, SC18  
Swiss Army Programming: Performance and Portability from Modern Tools. Dallas, Nov, SC18
- Using the Parallel Programming Model, OpenACC, to do More Science and Less Programming, Bootcamp, Princeton University, NJ, USA, USA, Oct 2018
- HPC-as-a-service to Domain Scientists, PASC Minisymposium, Basel, Switzerland, July, 2018
- Opportunities and Challenges Migrating Scientific Code to Accelerators, National Center for Atmospheric Research (NCAR), Boulder, USA, June, 2018
- Achieving Performance While Preserving Portability for NGS Application, Society of Industrial Mathematics, Parallel Processing (SIAM PP), Tokyo, Japan, Mar 2018
- Adapting Minisweep, a Proxy Application, on Heterogeneous Systems Using OpenACC Directives, Featured Speaker, Graphic Technology Conference (GTC), CA, USA, Mar 2018
- Path forward for softwarization to tackle evolving hardware, SPIE, Orlando, USA, Apr 2018

## 2017

- Parallelization and Acceleration of the Nuclear Reactor mini-app Minisweep on an OpenPOWER platform, 2nd OpenPOWER Academia Discussion Group Workshop, Supercomputing Conference (SC), Denver, USA, Nov 2017
- Building Your Academic Professional Network. Grace Hopper Celebrations, Houston, USA, Oct, 2017
- Using OpenACC for NGS Techniques to Create a Portable and Easy-to-Use Code Base. GPU Technology Conference (GTC). CA, USA, Mar 2017
- Exploring on-Node Programming Models for Irregular Algorithms. SIAM CSE, Atlanta, USA, Feb, 2017
- Programmer's perspective on evolving hardware, Challenges and Success Stories, RWTH Aachen, Germany, Feb 2017

## 2016 and before

- Hackathons, Best Practices in HPC Training, Workshop co-located at SC16, Salt Lake City, USA, November, 2016

- OpenACC status and feedback, Birds of a Feather (BoF): GPU Technology Conference (GTC), San Jose, USA, May, 2016
- Industry Standards for Programming Multicore Systems: Way to go!, Multicore Devcon Conference (MDC), California, Santa Clara, May, 2014
- Exascale will soon be here, how prepared are we, Argonne National Lab, Chicago, USA, Apr, 2014
- Simplifying Heterogeneous Multicore Programming Using Industry Standards. SIAM PP, Portland, Feb, 2014
- Open Registry for Accelerated Computing, Many-Core and Reconfigurable Supercomputing Conference (MRSC), Bristol, UK, 2011

OpenACC API: User Experience, Vendor Reaction, Relevance, and Roadmap. Birds of Feather Speaker at SC16, Salt Lake City, Nov, 2016