

The International Conference for High Performance  
Computing, Networking, Storage, and Analysis

# Conference Schedule at a Glance

**Program: November 17–22, 2019**

**Exhibits: November 18–21, 2019**

Colorado Convention Center  
Denver, CO



# SC19

Denver, CO | hpc  
is now.

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TCHPC

## Registration Pass Access

### Technical Program (TP)

- Awards (Tue–Wed)
- Awards Ceremony (Thu)
- Birds of a Feather (Tue–Thu)
- Doctoral Showcase Presentations (Thu)
- Early Career (Mon)
- Exhibitor Forum (Tue–Thu)
- Exhibits (Tue–Thu)
- Grand Opening Gala Reception (Mon)
- HPC Impact Showcase (Tue–Thu)
- HPC Is Now Plenary (Mon)
- Invited Talks (Tue–Thu)
- Keynote (Tue)
- Panels (Tue–Fri)
- Papers (Tue–Thu)
- Posters Display (Tue–Thu)
- Posters Reception (Tue)
- Research Posters Presentations (Wed)
- Scientific Visualization & Data Analytics Showcase Presentations (Wed)
- Student Cluster Competition (Mon–Thu)
- Technical Program Reception (Thu)
- One copy of the SC19 Proceedings

### Tutorials (TUT)

- HPC Is Now Plenary (Mon)
- Keynote (Tue)
- Panels (Friday only)
- Tutorial Lunch (Sun and/or Mon)
- Tutorials (Sun and/or Mon)
- Electronic access to all tutorial notes

### Workshops (W)

- HPC Is Now Plenary (Mon)
- Keynote (Tue)
- Panels (Friday only)
- Workshops (Sun, Mon, Fri)

### Exhibitor 24-hour Access (EX)

- Awards Ceremony (Thu)
- Birds of a Feather (Tue–Thu)
- Exhibitor Forum (Tue–Thu)
- Exhibitor Reception (Sun)
- Exhibits (Tue–Thu)
- Grand Opening Gala Reception (Mon)
- HPC Impact Showcase (Tue–Thu)
- HPC Is Now Plenary (Mon)
- Keynote (Tue)
- Panels (Friday only)
- Posters Display (Tue–Thu)
- Student Cluster Competition (Mon–Thu)

### Exhibits Hall Only (EXH)

- Awards Ceremony (Thu)
- Birds of a Feather (Tue–Thu)
- Exhibitor Forum (Tue–Thu)
- Exhibits (Tue–Thu)
- HPC Impact Showcase (Tue–Thu)
- HPC Is Now Plenary (Mon)
- Keynote (Tue)
- Panels (Friday only)
- Posters Display (Tue–Thu)
- Student Cluster Competition (Mon–Thu)

## General Information

### On-Site Registration and Conference Store

Lobby F

Saturday, November 16, 1–6 pm  
Sunday, November 17, 7 am–6 pm  
Monday, November 18, 7 am–9 pm  
Tuesday, November 19, 7:30 am–6 pm  
Wednesday, November 20, 7:30 am–6 pm  
Thursday, November 21, 7:30 am–5 pm  
Friday, November 22, 8–11 am

### Information Booths Main Information Booth

Lobby F

Saturday, November 16, 1–5 pm  
Sunday, November 17, 8 am–6 pm  
Monday, November 18, 8 am–7 pm  
Tuesday, November 19, 8 am–6 pm  
Wednesday, November 20, 8 am–6 pm  
Thursday, November 21, 8 am–6 pm  
Friday, November 22, 8:30 am–noon

### Secondary Information Booth

D Concourse

Sunday, November 17, 8 am–5 pm  
Monday, November 18, 8 am–5 pm  
Tuesday, November 19, 8 am–6 pm  
Wednesday, November 20, 8 am–4 pm

### Coat and Bag Check

Lobby A

Saturday, November 16, 11 am–8 pm  
Sunday, November 17, 7 am–6 pm  
Monday, November 18, 7 am–10 pm  
Tuesday, November 19, 7 am–9 pm  
Wednesday, November 20, 7 am–8 pm  
Thursday, November 21, 7 am–7 pm  
Friday, November 22, 7 am–1 pm

### Lost and Found

Located at the Exhibitor Approved Contractor (EAC) desk next to Coat and Bag Check in Lobby A

### Parents Room

Room 608

Saturday, November 16, 7 am–9 pm  
Sunday, November 17, 8 am–6 pm  
Monday, November 18, 8 am–9 pm  
Tuesday, November 19, 8 am–7 pm  
Wednesday, November 20, 8 am–7 pm  
Thursday, November 21, 8 am–6 pm  
Friday, November 22, 8 am–noon

### Quiet Room

Mezzanine A1, Upper Level

Access via elevators from Lobby A

Saturday, November 16, 8:30 am–5 pm  
Sunday, November 17, 8 am–6 pm  
Monday, November 18, 8 am–9 pm  
Tuesday, November 19, 8 am–7 pm  
Wednesday, November 20, 8 am–7 pm  
Thursday, November 21, 8 am–6 pm  
Friday, November 22, 8 am–noon

### SC20 Information SC20 Preview Booth

Lobby F

Tuesday, November 19, 10 am–5 pm  
Wednesday, November 20, 10 am–5 pm  
Thursday, November 21, 10 am–3 pm

### SC20 Preview

Mile High Ballroom

Thursday, November 21, 8:30–8:35 am

### Security

Room 204

### Visit Denver Booth

Main Lobby

Across from the Blue Bear

Sunday, November 17, 8 am–6 pm  
Monday, November 18, 8 am–7:30 pm  
Tuesday, November 19, 8 am–6 pm  
Wednesday, November 20, 8 am–6 pm  
Thursday, November 21, 8:30 am–5 pm  
Friday, November 22, 8–11 am

## Schedule of Events

Sunday, November 17

Time	Event	Session	Room
8:30 am–8:45 am	Students@SC	Decoding SC—How to Maximize Your Time at the Conference	705-707
8:30 am–12:00 pm	Tutorial	Containers in HPC	201
8:30 am–12:00 pm	Tutorial	High Performance Distributed Deep Learning: A Beginner's Guide	207
8:30 am–12:00 pm	Tutorial	Using the SPEC HPG Benchmarks for Better Analysis and Evaluation of Current and Future HPC Systems	303
8:30 am–12:00 pm	Tutorial	Boosting Power Efficiency of HPC Applications with GEOPM	407
8:30 am–5:00 pm	Tutorial	Best Practices for HPC in the Cloud	203
8:30 am–5:00 pm	Tutorial	Introduction to Quantum Computing	205
8:30 am–5:00 pm	Tutorial	Parallel I/O in Practice	210-212
8:30 am–5:00 pm	Tutorial	OpenMP Common Core: A "Hands-On" Exploration	301
8:30 am–5:00 pm	Tutorial	Node-Level Performance Engineering	302
8:30 am–5:00 pm	Tutorial	Secure Coding Practices and Automated Assessment Tools	401
8:30 am–5:00 pm	Tutorial	In Situ Analysis and Visualization with SENSEI and Ascent	402
8:30 am–5:00 pm	Tutorial	Tools and Techniques for Programming GPUs	403
8:30 am–5:00 pm	Tutorial	Parallel Computing 101	404
8:30 am–5:00 pm	Tutorial	Floating-Point Analysis and Reproducibility Tools for Scientific Software	405
8:30 am–5:00 pm	Tutorial	Mastering Tasking with OpenMP	406
8:45 am–9:15 am	Students@SC	Students@SC: Keynote Address "Delivering on the Exascale Computing Project Mission for the U.S. Department of Energy"	705-707
9:00 am–12:30 pm	Workshop	Computational Reproducibility at Exascale 2019 (CRE2019)	603
9:00 am–5:30 pm	Workshop	Innovating the Network for Data Intensive Science (INDIS)	501
9:00 am–5:30 pm	Workshop	Deep Learning on Supercomputers	502-503-504
9:00 am–5:30 pm	Workshop	Sixth SC Workshop on Best Practices for HPC Training and Education	505
9:00 am–5:30 pm	Workshop	The 5th International Workshop on Data Analysis and Reduction for Big Scientific Data (DRBSD-5) in Conjunction with SC19	506
9:00 am–5:30 pm	Workshop	Parallel Applications Workshop, Alternatives to MPI+X	507
9:00 am–5:30 pm	Workshop	Women in HPC: Diversifying the HPC Community and Engaging Male Allies	601
9:00 am–5:30 pm	Workshop	Workshop on Exascale MPI (ExaMPI)	605

**Schedule of Events****Sunday, November 17**

Time	Event	Session	Room
9:00 am–5:30 pm	Workshop	Fifth International Workshop on Heterogeneous High-Performance Reconfigurable Computing	607
9:00 am–5:30 pm	Workshop	Workshop on Education for High Performance Computing (EduHPC)	702
9:00 am–5:30 pm	Workshop	Workshop on Programming and Performance Visualization Tools (ProTools)	704-706
9:00 am–5:30 pm	Workshop	The 14th Workshop on Workflows in Support of Large-Scale Science (WORKS19)	708
9:00 am–5:30 pm	Workshop	The 2019 International Workshop on Software Engineering for HPC-Enabled Research (SE-HER 2019)	710
9:00 am–5:30 pm	Workshop	Fifth Computational Approaches for Cancer Workshop (CAFCW19)	712
9:15 am–10:30 am	Students@SC	Careers in HPC Panel	705-707
10:30 am–12:30 pm	Students@SC	Parallel Algorithm Design	705-707
1:30 pm–3:00 pm	Students@SC	Perfecting Your Elevator Speech and Growing Your Professional Network	705-707
1:30 pm–5:00 pm	Tutorial	Container Computing for HPC and Scientific Workflows	201
1:30 pm–5:00 pm	Tutorial	Tools and Best Practices for Distributed Deep Learning on Supercomputers	207
1:30 pm–5:00 pm	Tutorial	High Performance Computing (HPC) Data Center Planning and TCO: A Case Study and Roadmap	303
1:30 pm–5:00 pm	Tutorial	Productive Parallel Programming for FPGA with High-Level Synthesis	407
2:00 pm–5:30 pm	Workshop	HPC for Urgent Decision Making (UrgentHPC)	603
3:00 pm–5:00 pm	Students@SC	Résumé Workshop	Four Seasons 4
6:00 pm–9:00 pm	Reception	Exhibitors Reception	Wynkoop Brewery

**Schedule of Events****Monday, November 18**

Time	Event	Session	Room
8:30 am–10:00 am	Early Career Program	Early Career Program: Welcome and Leadership	709
8:30 am–12:00 pm	Tutorial	InfiniBand, Omni-Path, and High-Speed Ethernet for Beginners	201
8:30 am–12:00 pm	Tutorial	Fast Parallel Direct Linear Solvers and Preconditioners	406

## Schedule of Events

Monday, November 18

Time	Event	Session	Room
8:30 am–12:00 pm	Tutorial	Practical Persistent Memory Programming	407
8:30 am–5:00 pm	Tutorial	Delivering HPC: Procurement, Cost Models, Metrics, Value, and More	203
8:30 am–5:00 pm	Tutorial	Unified Cyber Infrastructure with Kubernetes	205
8:30 am–5:00 pm	Tutorial	Deep Learning at Scale	207
8:30 am–5:00 pm	Tutorial	Managing HPC Software Complexity with Spack	210-212
8:30 am–5:00 pm	Tutorial	Programming your GPU with OpenMP: A Hands-On Introduction	301
8:30 am–5:00 pm	Tutorial	Advanced MPI Programming	302
8:30 am–5:00 pm	Tutorial	Advanced OpenMP: Host Performance and 5.0 Features	303
8:30 am–5:00 pm	Tutorial	Better Scientific Software	401
8:30 am–5:00 pm	Tutorial	Hands-On Practical Hybrid Parallel Application Performance Engineering	402
8:30 am–5:00 pm	Tutorial	Fault-Tolerance for High Performance and Big Data Applications: Theory and Practice	403
8:30 am–5:00 pm	Tutorial	Application Porting and Optimization on GPU-Accelerated POWER Architectures	404
8:30 am–5:00 pm	Tutorial	High Performance I/O Frameworks 101	405
9:00 am–10:00 am	Students@SC	How to Create and Deliver Effective Research Posters	705-707
9:00 am–12:30 pm	Workshop	Third Workshop on Interactive High Performance Computing	506
9:00 am–12:30 pm	Workshop	6th International Workshop on HPC User Support Tools (HUST-19)	507
9:00 am–12:30 pm	Workshop	SuperCompCloud: Workshop on Interoperability of Supercomputing and Cloud Technologies	704-706
9:00 am–5:30 pm	Workshop	MCHPC'19: Workshop on Memory Centric High Performance Computing	501
9:00 am–5:30 pm	Workshop	Machine Learning in HPC Environments	502-503-504
9:00 am–5:30 pm	Workshop	IA <sup>3</sup> 2019: 9th Workshop on Irregular Applications: Architectures and Algorithms	505
9:00 am–5:30 pm	Workshop	International Parallel Data Systems Workshop (PDSW)	601
9:00 am–5:30 pm	Workshop	The 10th International Workshop on Performance Modeling, Benchmarking, and Simulation of High-Performance Computer Systems (PMBS19)	603
9:00 am–5:30 pm	Workshop	Tenth Annual Workshop for the Energy Efficient HPC Working Group	605

## Schedule of Events

Monday, November 18

Time	Event	Session	Room
9:00 am–5:30 pm	Workshop	10th Workshop on Latest Advances in Scalable Algorithms for Large-Scale Systems	607
9:00 am–5:30 pm	Workshop	Sixth Workshop on Accelerator Programming Using Directives (WACCPD)	702
9:00 am–5:30 pm	Workshop	ISAV 2019: In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization	708
9:00 am–5:30 pm	Workshop	PHOTONICS: Photonics-Optics Technology Oriented Networking, Information, and Computing Systems	710
9:00 am–5:30 pm	Workshop	3rd International Workshop on Software Correctness for HPC Applications (Correctness 2019)	712
10:30 am–12:00 pm	Early Career Program	Early Career Program: Career Development	709
11:00 am–1:00 pm	Students@SC	Resume Workshop	Four Seasons 4
1:30 pm–3:00 pm	Early Career Program	Early Career Program: Communication and Proposals	709
1:30 pm–5:00 pm	Tutorial	InfiniBand, Omni-Path, and High-Speed Ethernet: Advanced Features, Challenges in Designing HEC Systems and Usage	201
1:30 pm–5:00 pm	Tutorial	Compression for Scientific Data	406
1:30 pm–5:00 pm	Tutorial	Performance Tuning with the Roofline Model on GPUs and CPUs	407
2:00 pm–5:30 pm	Workshop	1st Annual Workshop on Large-Scale Experiment-in-the-Loop-Computing (XLOOP)	506
2:00 pm–5:30 pm	Workshop	Containers and New Orchestration Paradigms for Isolated Environments in HPC (CANOPIE HPC)	704-706
2:30 pm–5:00 pm	Students@SC	Modern Software Design, Tools, and Practices	705-707
3:30 pm–5:00 pm	Early Career Program	Mentor-Protégé Mixer	Four Seasons 4
4:30 pm–5:15 pm	Navigating SC19	First Time at the SC Conference	Four Seasons 1-2-3
5:30 pm–6:30 pm	HPC is Now Plenary	HPC Is Now Plenary	Mile High Ballroom
6:45 pm–7:00 pm	Exhibits	Exhibit Floor Ribbon Cutting	Lobby, Outside Halls A and F
7:00 pm–9:00 pm	Exhibits, Reception	Gala Opening Reception	Exhibit Halls A, B, E and F

## Schedule of Events

**Tuesday, November 19**

Time	Event	Session	Room
8:30 am–10:00 am	Keynote	SC19 Keynote Address	Mile High Ballroom
8:30 am–5:00 pm	ACM Student Research Competition: Graduate and Undergraduate Posters, Posters	ACM Student Research Competition Posters Display	E Concourse
8:30 am–5:00 pm	Doctoral Showcase, Posters	Doctoral Showcase Posters Display	E Concourse
8:30 am–5:00 pm	Posters, Research Posters	Research Posters Display	E Concourse
8:30 am–5:00 pm	Posters, Scientific Visualization & Data Analytics Showcase	Scientific Visualization & Data Analytics Showcase Posters Display	E Concourse
10:00 am–6:00 pm	Exhibits	Exhibits	Exhibit Halls A, B, E and F
10:00 am–6:00 pm	Computing for Change, SC Theater, SCinet, Students@SC, Technology Challenge	SC Theater	Booth 981
10:30 am–12:00 pm	Panel	Reconfigurable Computing in HPC: Success Stories Today and Future?	201-203
10:30 am–12:00 pm	Paper	Better Data Systems via Better Data Structures	301-302-303
10:30 am–12:00 pm	Paper	Machine Learning Training	401-402-403-404
10:30 am–12:00 pm	Paper	Computational Fluid Dynamics	405-406-407
10:30 am–12:00 pm	Exhibitor Forum	Exhibitor Forum: Cloud	501-502
10:30 am–12:00 pm	Exhibitor Forum	Exhibitor Forum: Managing and Storing Data I	503-504
10:30 am–12:00 pm	Invited Talk	Invited Talks–Tuesday Morning	Mile High Ballroom
12:15 pm–1:15 pm	Birds of a Feather	MPI 4.0 Is Coming–What Is in It and What Is Next?	201-203
12:15 pm–1:15 pm	Birds of a Feather	The IO-500 and the Virtual Institute of I/O	205-207



## Schedule of Events

**Tuesday, November 19**

Time	Event	Session	Room
12:15 pm–1:15 pm	Birds of a Feather	Machine Learning and HPC in Pharma Research and Development	210-212
12:15 pm–1:15 pm	Birds of a Feather	19th Graph500 List	301-302-303
12:15 pm–1:15 pm	Birds of a Feather	SIGHPC Annual Member Meeting	401-402-403-404
12:15 pm–1:15 pm	Birds of a Feather	Extreme-Scale Scientific Software Stack (E4S)	405-406-407
12:15 pm–1:15 pm	Birds of a Feather	User-Level Threads for Performant and Portable HPC	501-502
12:15 pm–1:15 pm	Birds of a Feather	Ask.CI, the Q&A Platform for Research Computing–Recent Developments	503-504
12:15 pm–1:15 pm	Birds of a Feather	Quantum Computing at the DOE Laboratories: Status and Future Directions	505
12:15 pm–1:15 pm	Birds of a Feather	Energy Efficiency Considerations for HPC Procurements	601-603
12:15 pm–1:15 pm	Birds of a Feather	Unified Communication X (UCX) Community	605
12:15 pm–1:15 pm	Birds of a Feather	Power API	607
12:15 pm–1:15 pm	Birds of a Feather	Breaking the Old Rule that HPL Goes with the Pace of the Slowest Node	702
12:15 pm–1:15 pm	Birds of a Feather	Exchanging Best Practices in Supporting Computational and Data-Intensive Research	704-706
12:15 pm–1:15 pm	Birds of a Feather	SAGE2 11th Annual International SC BOF: Scalable Amplified Group Environment for Global Collaboration	708
12:15 pm–1:15 pm	Birds of a Feather	Leading Inclusively–Redefining Effective Leadership in HPC	710
1:30 pm–3:00 pm	Panel	Developing and Managing Research Software in Universities and National Labs	201-203
1:30 pm–3:00 pm	Paper	High Radix Routing	301-302-303
1:30 pm–3:00 pm	Paper	Performance Tools	401-402-403-404
1:30 pm–3:00 pm	Paper	Cloud Scheduling	405-406-407
1:30 pm–3:00 pm	Exhibitor Forum	Exhibitor Forum: Hardware for AI	501-502
1:30 pm–3:00 pm	HPC Impact Showcase	HPC Impact Showcase 1	503-504
1:30 pm–3:00 pm	Invited Talk	Invited Talks–Tuesday Afternoon	Mile High Ballroom
3:30 pm–4:15 pm	Awards Presentation, Test of Time	Test of Time Award Presentation	Mile High Ballroom

## Schedule of Events

**Tuesday, November 19**

Time	Event	Session	Room
3:30 pm–5:00 pm	Panel	Within Reach: The Last Mile to Exascale	201-203
3:30 pm–5:00 pm	Paper	State of the Practice	205-207
3:30 pm–5:00 pm	Paper	Frameworks & Tools	301-302-303
3:30 pm–5:00 pm	Paper	Linear Algebra Algorithms	401-402-403-404
3:30 pm–5:00 pm	Paper	Power and Scale	405-406-407
3:30 pm–5:00 pm	Exhibitor Forum	Exhibitor Forum: AI Applications	501-502
3:30 pm–5:00 pm	HPC Impact Showcase	HPC Impact Showcase 2	503-504
5:15 pm–6:45 pm	Birds of a Feather	The Future of NSF Supported Advanced Cyberinfrastructure	201-203
5:15 pm–6:45 pm	Birds of a Feather	Lustre Community BoF: Lustre in HPC, AI, and the Cloud	205-207
5:15 pm–6:45 pm	Birds of a Feather	Cloud Federation for Large-Scale Collaborations	210-212
5:15 pm–6:45 pm	Birds of a Feather	Can Arm Take the Lead in HPC?	301-302-303
5:15 pm–6:45 pm	Birds of a Feather	Heterogeneous and Distributed ISO C++ for HPC Status and Directions	401-402-403-404
5:15 pm–6:45 pm	Birds of a Feather	HDF5 and Its role in Exascale, Cloud, and Object Stores	405-406-407
5:15 pm–6:45 pm	Birds of a Feather	Enabling Data Services for HPC	501-502
5:15 pm–6:45 pm	Birds of a Feather	AlBench: Toward a Comprehensive AI Benchmark Suite for HPC, Datacenter, Edge, and IoT	503-504
5:15 pm–6:45 pm	Birds of a Feather	Designing and Building Next-Generation Computer Systems for Deep Learning	505
5:15 pm–6:45 pm	Birds of a Feather	Ceph in HPC Environments	601-603
5:15 pm–6:45 pm	Birds of a Feather	Looking Ahead to Tape Technology's Role in HPC – Future Advancements, Challenges, and Roadmap	605
5:15 pm–6:45 pm	Birds of a Feather	Americas HPC Collaboration	607
5:15 pm–6:45 pm	Birds of a Feather	OpenACC API User Experience, Vendor Reaction, Relevance, and Roadmap	702
5:15 pm–6:45 pm	Birds of a Feather	Machine-Learning Hardware: Architecture, System Interfaces, and Programming Models	704-706
5:15 pm–6:45 pm	Birds of a Feather	OpenSHMEM: State of the Union 2019	708
5:15 pm–6:45 pm	Birds of a Feather	Global Research Platform (GRP): Creating Worldwide Advanced Services and Infrastructure for Science	710

## Schedule of Events

**Tuesday, November 19**

Time	Event	Session	Room
5:15 pm–6:45 pm	Birds of a Feather	Community Building for Sustainable and Scalable HPC Outreach	705-707-709
5:15 pm–6:45pm	Birds of a Feather	TOP500 Supercomputers	Mile High Ballroom
5:15 pm–7:00 pm	ACM Student Research Competition: Graduate and Undergraduate Posters, Doctoral Showcase, Posters, Reception, Research Posters, Scientific Visualization & Data Analytics Showcase	Poster Reception	E Concourse

## Schedule of Events

**Wednesday, November 20**

Time	Event	Session	Room
8:30 am–10:00 am	Awards Presentation	ACM and IEEE-CS Award Presentations	Mile High Ballroom
8:30 am–5:00 pm	ACM Student Research Competition: Graduate and Undergraduate Posters, Posters	ACM Student Research Competition Posters Display	E Concourse
8:30 am–5:00 pm	Doctoral Showcase, Posters	Doctoral Showcase Posters Display	E Concourse
8:30 am–5:00 pm	Posters, Research Posters	Research Posters Display	E Concourse
8:30 am–5:00 pm	Posters, Scientific Visualization & Data Analytics Showcase	Scientific Visualization & Data Analytics Showcase Posters Display	E Concourse
10:00 am–3:00 pm	Students@SC	Student/Postdoc Job Fair	Four Seasons 1-2

## Schedule of Events

Wednesday, November 20

Time	Event	Session	Room
10:00 am–6:00 pm	Exhibits	Exhibits	Exhibit Halls A, B, E and F
10:00 am–6:00 pm	Computing for Change, SC Theater, SCinet, Students@SC, Technology Challenge	SC Theater	Booth 981
10:30 am–12:00 pm	Panel	Edge to Exascale : Computational Innovations in Cancer and the Future for Learning Health Systems	201-203
10:30 am–12:00 pm	Paper	Network Evaluation	301-302-303
10:30 am–12:00 pm	Paper	Machine Learning Optimization	401-402-403-404
10:30 am–12:00 pm	Paper	Compression	405-406-407
10:30 am–12:00 pm	Exhibitor Forum	Exhibitor Forum: Networking	501-502
10:30 am–12:00 pm	Exhibitor Forum	Exhibitor Fourm: Managing and Storing Data II	503-504
10:30 am–12:00 pm	Posters, Research Posters	Best Research Posters Presentations	505
10:30 am–12:00 pm	Invited Talk	Invited Talks–Wednesday Morning	Mile High Ballroom
12:15 pm–1:15 pm	Birds of a Feather	Open MPI State of the Union 2019	201-203
12:15 pm–1:15 pm	Birds of a Feather	Impacting Cancer with HPC: Challenges and Opportunities	205-207
12:15 pm–1:15 pm	Birds of a Feather	Charting the PMIx Roadmap	210-212
12:15 pm–1:15 pm	Birds of a Feather	BeeGFS – Architecture, Innovative Implementations, and Development Plans	301-302-303
12:15 pm–1:15 pm	Birds of a Feather	OpenHPC Community BoF	401-402-403-404
12:15 pm–1:15 pm	Birds of a Feather	Getting Scientific Software Installed	405-406-407
12:15 pm–1:15 pm	Birds of a Feather	Sisyphus' Work: Adapting Applications to New HPC Architectures–a European Perspective.	501-502
12:15 pm–1:15 pm	Birds of a Feather	Emerging Technologies and HPC Education, Outreach, and Training: Challenges and Opportunities	503-504

## Schedule of Events

Wednesday, November 20

Time	Event	Session	Room
12:15 pm–1:15 pm	Birds of a Feather	SOLAR Consortium: Accelerated Ray Tracing for Scientific Simulations	505
12:15 pm–1:15 pm	Birds of a Feather	The National Academies' Report on Reproducibility and Replicability in Science: Inspirations for the SC Reproducibility Initiative	601-603
12:15 pm–1:15 pm	Birds of a Feather	With Great Power Comes Great Responsibility: Ethics in HPC	605
12:15 pm–1:15 pm	Birds of a Feather	Open OnDemand User Group Meeting	607
12:15 pm–1:15 pm	Birds of a Feather	U.S. Strategic Computing – An Update	702
12:15 pm–1:15 pm	Birds of a Feather	InfiniBand In-Network Computing Technology and Roadmap	704-706
12:15 pm–1:15 pm	Birds of a Feather	Training and Education for HPC System Administrators: How Can We Do Better?	708
12:15 pm–1:15 pm	Birds of a Feather	HPC PowerStack: Community-Driven Collaboration on Power-Aware System Stack	710
12:15 pm–1:15 pm	Birds of a Feather	PBS Pro Open Source Project Community BoF	705-707-709
1:30 pm–3:00 pm	Panel	Open Science in a Changing HPC Landscape	201-203
1:30 pm–3:00 pm	Paper	Sparse Computations	301-302-303
1:30 pm–3:00 pm	Paper	Network Congestion and Offload	401-402-403-404
1:30 pm–3:00 pm	Paper	Partitioning & Scheduling	405-406-407
1:30 pm–3:00 pm	Exhibitor Forum	Exhibitor Forum: Hardware and Architectures I	501-502
1:30 pm–3:00 pm	HPC Impact Showcase	HPC Impact Showcase 3	503-504
1:30 pm–3:00 pm	Posters, Scientific Visualization & Data Analytics Showcase	Scientific Visualization & Data Analytics Showcase Posters Presentations	505
1:30 pm–3:00 pm	Invited Talk	Invited Talks–Wednesday Afternoon	Mile High Ballroom
3:30 pm–5:00 pm	Panel	Democratization of HPC through the Use of Web Portals: Different Strategies	201-203
3:30 pm–5:00 pm	ACM Gordon Bell Finalist, Awards Presentation	Gordon Bell Prize Finalist Session 1	205-207
3:30 pm–5:00 pm	Paper	Network and Memory Specialization	301-302-303

## Schedule of Events

Wednesday, November 20

Time	Event	Session	Room
3:30 pm–5:00 pm	Paper	Software Infrastructures for Applications	401-402-403-404
3:30 pm–5:00 pm	Paper	GPU	405-406-407
3:30 pm–5:00 pm	Exhibitor Forum	Exhibitor Forum: Hardware and Architectures II	501-502
3:30 pm–5:00 pm	ACM Student Research Competition: Graduate and Undergraduate Posters, Posters	ACM Student Research Semi-Finalists Presentations	505
4:00 pm–6:00 pm	Exhibits	Family Day	Exhibit Halls A, B, E and F
5:15 pm–6:45 pm	Birds of a Feather	Achieving Performance on Current and Future Large-Scale Intel-Based Systems	201-203
5:15 pm–6:45 pm	Birds of a Feather	OpenMP API Version 5.0–State of the Union	205-207
5:15 pm–6:45 pm	Birds of a Feather	Analyzing Parallel I/O	210-212
5:15 pm–6:45 pm	Birds of a Feather	Engaging the DoD High Performance Computing Modernization Program (HPCMP)	401-402-403-404
5:15 pm–6:45 pm	Birds of a Feather	Containers in HPC	405-406-407
5:15 pm–6:45 pm	Birds of a Feather	LLVM in HPC: Exciting Developments Again This Year!	501-502
5:15 pm–6:45 pm	Birds of a Feather	The Green 500: Trends in Energy Efficient Supercomputing	503-504
5:15 pm–6:45 pm	Birds of a Feather	Reconfigurable/FPGA Clusters for High Performance Computing	505
5:15 pm–6:45 pm	Birds of a Feather	Cloud and Open Infrastructure Solutions To Run HPC Workloads	601-603
5:15 pm–6:45 pm	Birds of a Feather	HPC Graph Toolkits and the GraphBLAS Forum	605
5:15 pm–6:45 pm	Birds of a Feather	Multi-Level Memory and Storage for HPC, Data Analytics, and AI	607
5:15 pm–6:45 pm	Birds of a Feather	MPICH: A High Performance Open-Source MPI Implementation	702
5:15 pm–6:45 pm	Birds of a Feather	Big Data and Exascale Computing (BDEC2) Community Roundtable	704-706
5:15 pm–6:45 pm	Birds of a Feather	Challenges and Opportunities in Academic HPC Systems Research in 2030	708

## Schedule of Events

Wednesday, November 20

Time	Event	Session	Room
5:15 pm–6:45 pm	Birds of a Feather	Software Engineering and Reuse in Modeling, Simulation, and Data Analytics for Science and Engineering	710

## Schedule of Events

Thursday, November 21

Time	Event	Session	Room
8:30 am–10:00 am	Invited Talk	Invited Talks–Thursday Morning Plenary	Mile High Ballroom
8:30 am–5:00 pm	ACM Student Research Competition: Graduate and Undergraduate Posters, Posters	ACM Student Research Competition Posters Display	E Concourse
8:30 am–5:00 pm	Doctoral Showcase, Posters	Doctoral Showcase Posters Display	E Concourse
8:30 am–5:00 pm	Posters, Research Posters	Research Posters Display	E Concourse
8:30 am–5:00 pm	Posters, Scientific Visualization & Data Analytics Showcase	Scientific Visualization & Data Analytics Showcase Posters Display	E Concourse
10:00 am–3:00 pm	Exhibits	Exhibits	Exhibit Halls A, B, E and F
10:00 am–3:00 pm	Computing for Change, SC Theater, SCinet, Students@SC, Technology Challenge	SC Theater	Booth 981
10:30 am–12:00 pm	Panel	Developing Exascale-Capable Applications: Recent Progress and Lessons Learned from the Exascale Computing Project	201-203
10:30 am–12:00 pm	Paper	Improved Performance through Monitoring and Fine-Tuned Orchestration	205-207

## Schedule of Events

Thursday, November 21

Time	Event	Session	Room
10:30 am–12:00 pm	Doctoral Showcase, Posters	Doctoral Showcase I Presentations	210-212
10:30 am–12:00 pm	Paper	Molecular Dynamics	301-302-303
10:30 am–12:00 pm	Paper	Algorithmic Techniques for Large-Scale Applications	401-402-403-404
10:30 am–12:00 pm	Paper	Resilience and Fault Injection	405-406-407
10:30 am–12:00 pm	Exhibitor Forum	Exhibitor Forum: Futures and Exascale	501-502
10:30 am–12:00 pm	Exhibitor Forum	Exhibitor Forum: Software	503-504
10:30 am–12:00 pm	Invited Talk	Invited Talks–Thursday Morning	Mile High Ballroom
12:15 pm–1:15 pm	Birds of a Feather	MLPerf: A Benchmark for Machine Learning	201-203
12:15 pm–1:15 pm	Birds of a Feather	Operational Data Analytics	205-207
12:15 pm–1:15 pm	Birds of a Feather	TCHPC Career Panel	210-212
12:15 pm–1:15 pm	Birds of a Feather	Knowledge Is Power: Unleashing the Potential of Your Archives Through Metadata	301-302-303
12:15 pm–1:15 pm	Birds of a Feather	Slurm Community BoF	401-402-403-404
12:15 pm–1:15 pm	Birds of a Feather	Whither Advanced Scientific Computing After Exascale Is Achieved?	405-406-407
12:15 pm–1:15 pm	Birds of a Feather	Khronos SYCL Heterogeneous C++ Status and Directions	501-502
12:15 pm–1:15 pm	Birds of a Feather	Spack Community BoF	503-504
12:15 pm–1:15 pm	Birds of a Feather	Quality Assurance and Coding Standards for Parallel Software	505
12:15 pm–1:15 pm	Birds of a Feather	European HPC Ecosystem Summit	601-603
12:15 pm–1:15 pm	Birds of a Feather	Charm++ and AMPI: Adaptive and Asynchronous Parallel Programming	605
12:15 pm–1:15 pm	Birds of a Feather	HPC System Testing: Procedures, Acceptance, Regression Testing, and Automation	607
12:15 pm–1:15 pm	Birds of a Feather	Science and Technology Requirements for Leadership Computing in Open Science	702
12:15 pm–1:15 pm	Birds of a Feather	HPCG Benchmark Update	704-706
12:15 pm–1:15 pm	Birds of a Feather	Benchmarking Machine Learning Ecosystem on HPC Systems	708



## Schedule of Events

Thursday, November 21

Time	Event	Session	Room
12:15 pm–1:15 pm	Birds of a Feather	Advanced Architecture Testbeds: Community Resources for Enhanced HPC Research	710
12:15 pm–1:15 pm	Birds of a Feather	Python for High Performance and Scientific Computing	705-707-709
12:45 pm–1:30 pm	Awards Presentation	SC19 Awards Ceremony	Mile High Ballroom
1:30 pm–3:00 pm	Panel	New Partners for HPC Centers: Experimental Facilities and International Instrument Collaborations with Exascale Datasets	201-203
1:30 pm–3:00 pm	Doctoral Showcase, Posters	Doctoral Showcase II Presentations	210-212
1:30 pm–3:00 pm	Paper	Graph and Tensor Computations	301-302-303
1:30 pm–3:00 pm	Paper	Quantum Applications	401-402-403-404
1:30 pm–3:00 pm	Paper	Improving Next-Generation Performance and Resilience	405-406-407
1:30 pm–3:00 pm	HPC Impact Showcase	HPC Impact Showcase 4	503-504
3:30 pm–5:00 pm	Panel	Sustainability of HPC Research Computing: Fostering Career Paths for Facilitators, Research Software Engineers, and Gateway Creators	201-203
3:30 pm–5:00 pm	Doctoral Showcase, Posters	Doctoral Showcase III Presentations	210-212
3:30 pm–5:00 pm	Paper	Image Reconstruction	301-302-303
3:30 pm–5:00 pm	Paper	The Fewer Tiers, the Fewer Tears	401-402-403-404
3:30 pm–5:00 pm	Paper	Heterogeneous Systems	405-406-407
3:30 pm–5:00 pm	HPC Impact Showcase	HPC Impact Showcase 5	503-504
6:00 pm–9:00 pm	Reception	Technical Program Reception	

## Schedule of Events

Friday, November 22

Time	Event	Session	Room
8:00 am–12:00 pm	Students@SC	Hands-On with the Summit Supercomputer	705-707
8:30 am–10:00 am	Panel	Quantum Inspired vs. Quantum Computing – What Next?	201-203
8:30 am–10:00 am	Panel	Enabling Machine Learning-Based HPC Performance Diagnostics in Production Environments	205-207
8:30 am–12:00 pm	Workshop	2nd International Workshop on Performance, Portability, and Productivity in HPC (P3HPC)	401-402-403-404
8:30 am–12:00 pm	Workshop	HPC Systems Professionals Workshop (HPCSYSPROS19)	405-406-407
8:30 am–12:00 pm	Workshop	The 3rd Industry/University Joint International Workshop on Data-Center Automation, Analytics, and Control (DAAC)	501-502
8:30 am–12:00 pm	Workshop	3rd International Workshop on Emerging Parallel and Distributed Runtime Systems and Middleware (IPDRM'2019)	503-504
8:30 am–12:00 pm	Posters, Scientific Visualization & Data Analytics Showcase	Scientific Visualization & Data Analytics Showcase Posters Display	E Concourse
8:40 am–12:00 pm	Workshop	Workshop on Fault-Tolerance for HPC at Extreme Scale (FTXS)	301-302-303
10:30 am–12:00 pm	Panel	The Road to Exascale and Beyond Is Paved by Software: How Algorithms, Libraries and Tools Will Make Exascale Performance Real	201-203
10:30 am–12:00 pm	Panel	HPC Big Data and AI: Computing under Constraints	205-207

Colorado Convention Center  
Ballroom Level / Lower Level

E

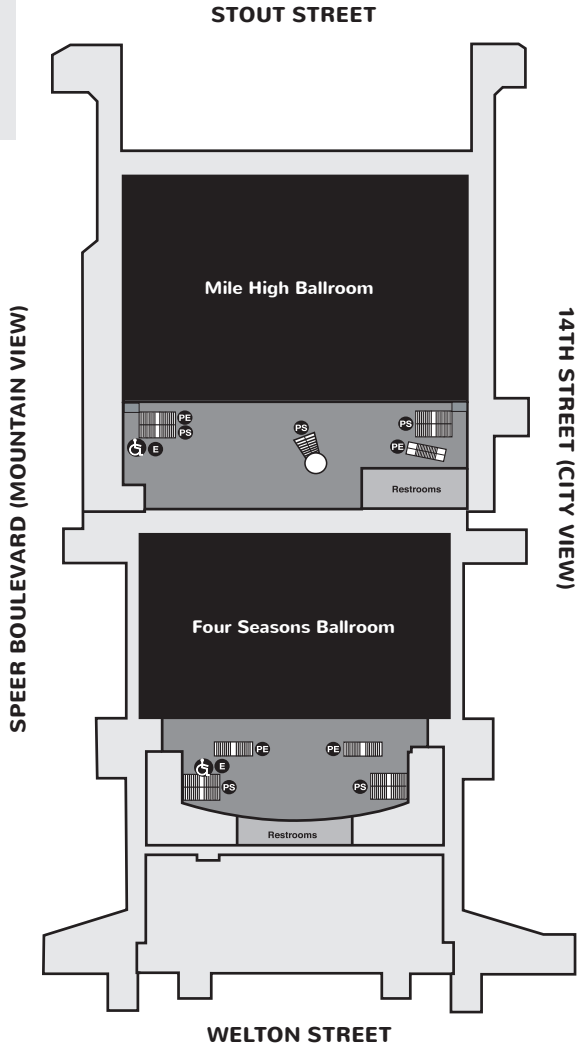
Elevators

PE

Public Escalators

PS

Public Stairs



C

E

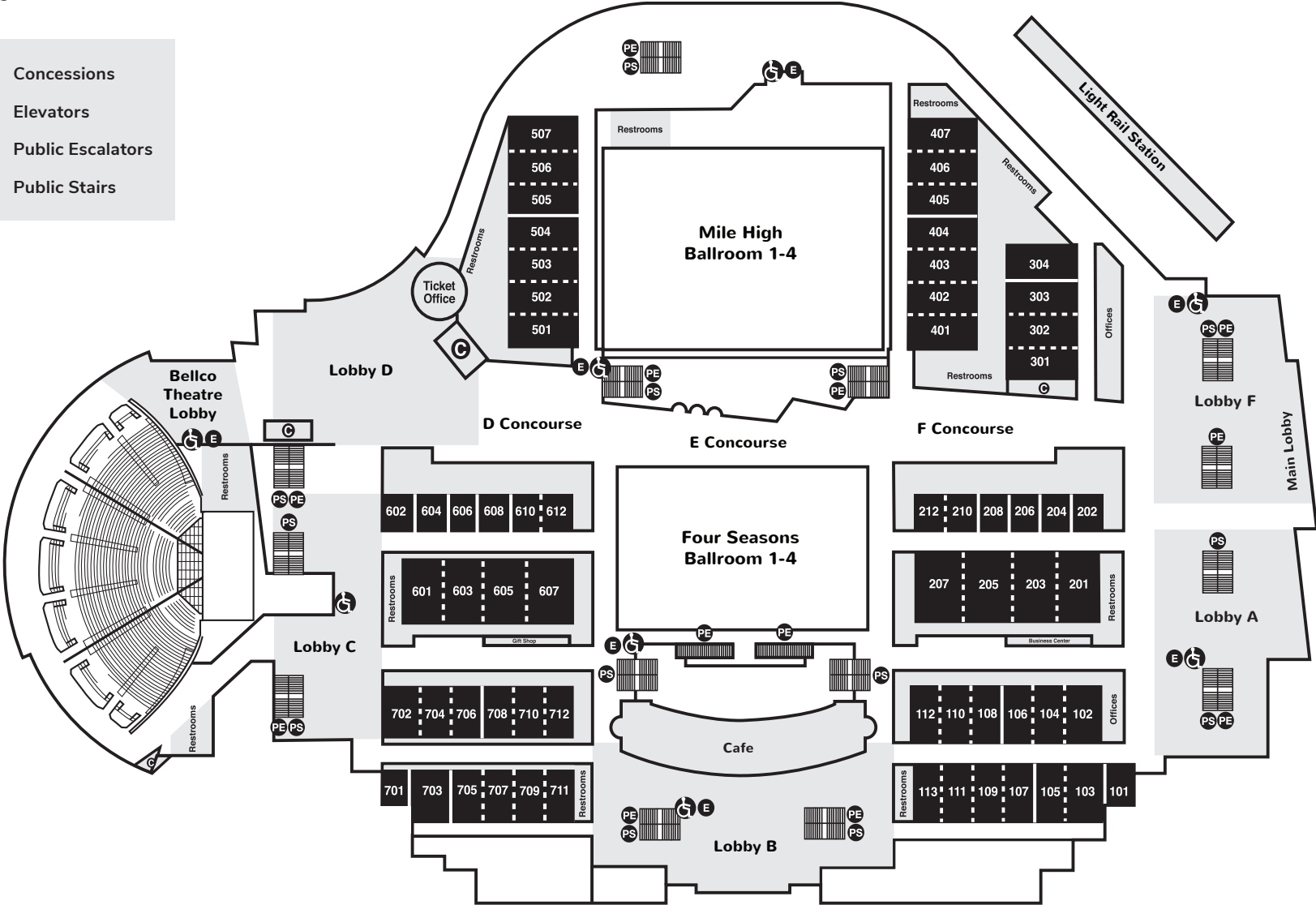
PE

PS

Concessions  
Elevators  
Public Escalators  
Public Stairs

SPEER BOULEVARD (MOUNTAIN VIEW)

STOUT STREET

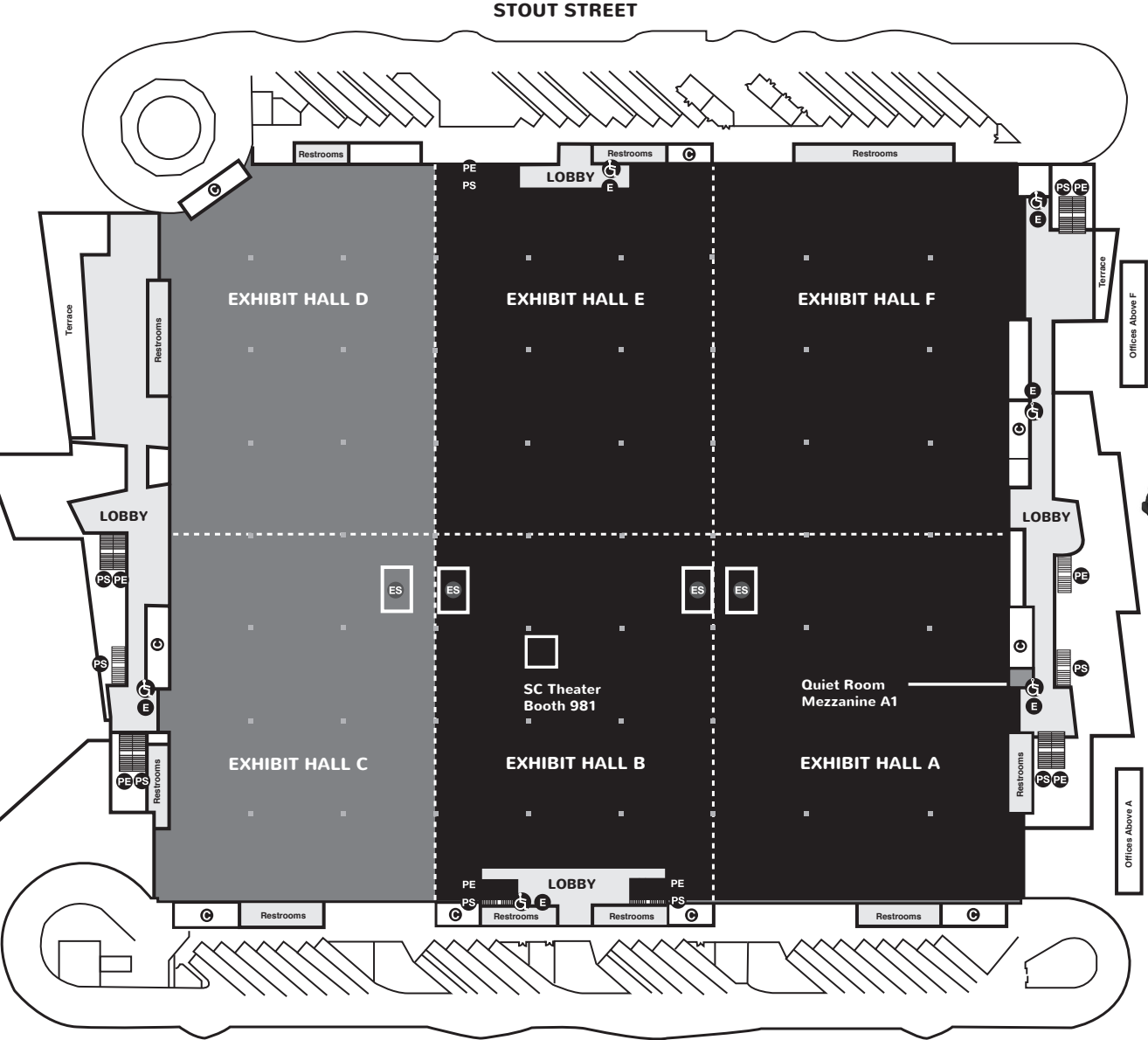


14TH STREET (CITY VIEW)

WELTON STREET

SPEER BOULEVARD (MOUNTAIN VIEW)

Offices Above C



14TH STREET (CITY VIEW)

Offices Above A

Offices Above F

WELTON STREET



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