NEW EVENT

IEEE
QUANTUM
WEEK

12–16 OCTOBER 2020

REGISTRATION IS OPEN!
qce.quantum.ieee.org

The Future Directions Quantum Initiative invites you to IEEE Quantum Week 2020—the inaugural IEEE International Conference on Quantum Computing and Engineering (QCE).

IEEE QUANTUM | IEEE COMPUTER SOCIETY | IEEE ComSoc IEEE Communications Society | IEEE CSC Council on Superconductivity

IEEE Photonics Society | IEEE ELECTRONICS PACKAGING SOCIETY | IEEE TEMS Technology & Engineering Management Society | IEEE

IEEE Quantum Week

IEEE International Conference on Quantum Computing & Engineering (QCE20)
Oct 12-16, 2020
Advance Conference Program V80

IEEE Quantum Week Oct 12-16, 2020
Uniform Daily Schedule

MT (UTC-6)	Sessions
8:30–10:00	Session 1: Keynote, Awards, Announcements
10:00–10:45	Session 2: Exhibits, Posters, BoFs, Networking
10:45–12:15	Session 3: Papers & Panels, Tutorials, Workshops
12:15–13:00	Session 4: Exhibits, Posters, BoFs, Networking
13:00–14:30	Session 5: Papers & Panels, Tutorials, Workshops
14:30–15:15	Session 6: Exhibits, Posters, BoFs, Networking
15:15–16:45	Session 7: Papers & Panels, Tutorials, Workshops
16:45–17:30	Session 8: Exhibits, Posters, BoFs, Networking
17:30–19:00	Session 9: Keynote, Awards, Announcements
19:00–19:45	Session 10: Exhibits, Posters, BoFs, Networking

QCE20 — IEEE Quantum Week Advance Program with links to Keynotes, Papers, Tutorials, Workshops, Panels, and Posters

Times listed here are in Mountain Time or Colorado Time (MDT) or UTC-6

V80	8:30-10:00	10:00-10:45	10:45-12:15	12:15-13:00	13:00-14:30	14:30-15:15	15:15-16:45	16:45-17:30	17:30-19:00	19:00-19:45
Mon Oct 12	Jerry Chow IBM Quantum	Bluefors	QIA-1	IBM Quantum	QIA-2	Honeywell	QIA-3		Michelle Simmons UNSW Australia	Open Exhibits
		QM	Scholten-Greenberg, IBM: Software for Q Apps	ColdQuanta	Scholten-Greenberg, IBM: Software for Q Apps	NC-State	Scholten-Greenberg, IBM: Software for Q Apps			
		Pasqal	Pakin, LANL, Rieffel, NASA: QIS Intro	QDevil	Pakin, LANL, Rieffel, NASA: QIS Intro	CMC.ca	Pakin, LANL, Rieffel, NASA: QIS Intro	Quantropi		Open Exhibits
			Mohiyaddin-Radu, IMEC: Semicond Engr for QC	IEEE-TQE	Mohiyaddin-Radu, IMEC: Semicond Engr for QC	ACM-TQC	Mohiyaddin-Radu, IMEC: Semicond Engr for QC			
		Posters 1	Asfaw, IBM: Qiskit	Posters 2	Asfaw, IBM: Qiskit	Open Posters	Asfaw, IBM: Qiskit	Open Posters		Open Posters
		Open BoF	Hamilton-Date, ORNL: Applied Q AI	CREATE QC BoF	Hamilton-Date, ORNL: Applied Q AI	Open BoF	Hamilton-Date, ORNL: Applied Q AI	Open BoF		Open BoF
		Keynote Networking	Van Meter, Satoh: Simulation of Quantum Network	Networking	Van Meter, Satoh: Simulation of Quantum Network	Networking	Van Meter, Satoh: Simulation of Quantum Network	Networking		Keynote Networking
		Networking	Angara et al., UVic, Honeywell: QC for High Schoolers QC	Networking	Angara et al., UVic, Honeywell: QC for High Schoolers QC	Networking	Angara et al., UVic, Honeywell: QC for High Schoolers QC	Networking		Networking
		Colorado	Panel: Quantum Machines Build QC from Ground Up	Colorado	Panel: Honeywell Engineering Challenges	Colorado	QENG	Colorado		Colorado
Tue Oct 13	Patty Lee, Honeywell Quantum Solutions	Keysight	QCSC-1		QCSC-2		QCSC-3		Yu Chen Google AI Quantum	
		Toptica	Lee et al., Honeywell: Eng Trapped Ion Q Computers	Honeywell	Lee et al., Honeywell: Eng Trapped Ion Q Computers	Microsoft	Lee et al., Honeywell: Eng Trapped Ion Q Computers	IBM Quantum		EeroQ
		Elyah	Tibble, MS: QDK & Azure Quantum	Q-Ctrl	Tibble, MS: QDK & Azure Quantum	Xanadu	Tibble, MS: QDK & Azure Quantum	Zapata		Open Exhibits
		Oxford-Inst	Thiele, ZH Instr: Circuit Q E-dynamics (QED) QC	IQM	Thiele, ZH Instr: Circuit Q E-dynamics (QED) QC	seeQC	Thiele, ZH Instr: Circuit Q E-dynamics (QED) QC			Open Posters
		Posters 3	Fuller, IBM: QML	Posters 4	Fuller, IBM: QML	Posters 5	Fuller, IBM: QML	Posters 6		
		IEEE CSC BoF	Khan-Weinstein: QC Inc., MITRE: Q Solution Arch	Open BoF	Khan-Weinstein: QC Inc., MITRE: Q Solution Arch	Open BoF	Khan-Weinstein: QC Inc., MITRE: Q Solution Arch	Open BoF		Open BoF
		Keynote Networking	Gottlieb, DW: Q Annealing Hybrid Programming	Networking	Gottlieb, DW: Q Annealing Hybrid Programming	Networking	Gottlieb, DW: Q Annealing Hybrid Programming	Networking		Keynote Networking
		Networking	Perez et al., UCLM, Spain: Q Software Engr	Networking	Perez et al., UCLM, Spain: Q Software Engr	Networking	Perez et al., UCLM, Spain: Q Software Engr	Networking		Networking
		Colorado	Alexander, IBM: Q Pulse Control	Colorado	Alexander, IBM: Q Pulse Control	Colorado	Alexander, IBM: Q Pulse Control	Colorado		Colorado
			QASN-1		QASN-2					
Wed Oct 14	Krysta Svore Microsoft Quantum	IQM	QC-1	Microsoft	QC-2	IBM Quantum	QC-3		Kae Nemoto NII QIS Japan	
		netlabs	Chrostowski, et al.: Photonics QC & Sim	QM	Chrostowski, et al.: Photonics QC & Sim	Zapata		Honeywell		Open Exhibits
		Delft-Circuits	Woerner, Scholten, IBM: Optimization	Toptica	Woerner, Scholten, IBM: Optimization	Aliro Quantum	Woerner, Scholten, IBM: Optimization	Xanadu		
		Oxford-Inst	Tsang, Mykhailova, Microsoft: Curr Dev - MS QDK	Zurich-Inst	Tsang, Mykhailova, Microsoft: Curr Dev - MS QDK		Tsang, Mykhailova, Microsoft: Curr Dev - MS QDK			Open Posters
		Posters 7	Killoran, Xanadu: QML	Posters 8	Killoran, Xanadu: QML	Posters 9	Killoran, Xanadu: QML	Open Posters		
		Open BoF	Grant-McGeoch, ORNL, D-Wave: Tuning Annealers	HE Physics BoF	Grant-McGeoch, ORNL, D-Wave: Tuning Annealers	Open BoF	Grant-McGeoch, ORNL, D-Wave: Tuning Annealers	Reg10 Quantum		Open BoF
		Networking	Venegas-Gomez: Preparing Workforce	Networking	Venegas-Gomez: Preparing Workforce	Networking	Venegas-Gomez: Preparing Workforce	Networking		Networking
		Networking	Root-Messaoudi, Keysight: Iontrap Qubit Ctrl Reqmts	Networking	Root-Messaoudi, Keysight: Iontrap Qubit Ctrl Reqmts	Networking	Root-Messaoudi, Keysight: Iontrap Qubit Ctrl Reqmts	Networking		Networking
		Colorado	QCSC-4	Colorado	Panel: IBM Pivoting into QC	Colorado	Panel: Zapata Towards IR for Quantum	Colorado		Colorado
Thu Oct 15	Alán Aspuru-Guzik University of Toronto	CMC.ca	QEDU		Panel: IBM Training the Next Generation		Panel: Microsoft Bringing Q Programming into Q Edu		Anne Matsuura Intel Labs	
		Q-Ctrl	Chrostowski et al.: Photonic Tech for QIS	Zapata	Chrostowski et al.: Photonic Tech for QIS	Quantropi	Chrostowski et al.: Photonic Tech for QIS	Microsoft		Open Exhibits
		Bluefors	Córcoles, IBM: Q Quality Assessment	Pasqal	Córcoles, IBM: Q Quality Assessment	ColdQuanta	Córcoles, IBM: Q Quality Assessment	Aliro Quantum		
		Zurich-Inst	Fahim-Charbon, Fermi, EPFL: Cryogenic Electronics	ACM-TQC	Fahim-Charbon, Fermi, EPFL: Cryogenic Electronics	IEEE-TQE	Fahim-Charbon, Fermi, EPFL: Cryogenic Electronics			Open Posters
		Posters 10	Barkoutsos, Jones, IBM: Q ChemSim	Posters 11	Barkoutsos, Jones, IBM: Q ChemSim	Open Posters	Barkoutsos, Jones, IBM: Q ChemSim	Open Posters		
		Open BoF	Pooser, Humble, ORNL: Q Sensing	QIS at Argonne	Pooser, Humble, ORNL: Q Sensing	QEDU BoF	Pooser, Humble, ORNL: Q Sensing	Open BoF		Open BoF
		Networking	Clemson, Argonne: Combinatorial Opt	Networking	Clemson, Argonne: Combinatorial Opt	Networking	Clemson, Argonne: Combinatorial Opt	Networking		Networking
		Networking	Ochoa, IEEE P7130 SA WG: Q Tech Nomenclature	Networking	Ochoa, IEEE P7130 SA WG: Q Tech Nomenclature	Networking	Ochoa, IEEE P7130 SA WG: Q Tech Nomenclature	Networking		Networking
		Colorado	QC-4	Colorado	QC-5	Colorado	QC-6	Colorado		Colorado
Fri Oct 16	Jake Taylor NIST, QuIS, JQI	IBM Quantum	QBM-1		QBM-2		Panel: QED-C Enabling & Growing Quantum Industry		Alexander Condello D-Wave Systems	
		NC-State	Bronn-Minev-Scholten, IBM: Qubit Ctrl & Design		Bronn-Minev-Scholten, IBM: Qubit Ctrl & Design		Bronn-Minev-Scholten, IBM: Qubit Ctrl & Design	Open Exhibits		Open Exhibits
		QDevil	Lahmann, Heider, IBM: QC Serious Games	Microsoft	Lahmann, Heider, IBM: QC Serious Games	Honeywell	Lahmann, Heider, IBM: QC Serious Games			
			Cheng-Wong-Sotelo, TEMS: QC Entrepreneurship	Keysight	Cheng-Wong-Sotelo, TEMS: QC Entrepreneurship	Quantropi	Cheng-Wong-Sotelo, TEMS: QC Entrepreneurship	Open Posters		Open Posters
		Posters 12	Gottlieb, DW: Misc Webinars	Posters 13	Gottlieb, DW: Misc Webinars	Open Posters	Gottlieb, DW: Misc Webinars			
		Open BoF	Alexeev-Motten-Mandra, Argonne, NASA: Q Simulation	Q Sci Ctrs BoF	Alexeev-Motten-Mandra, Argonne, NASA: Q Simulation	Open BoF	Alexeev-Motten-Mandra, Argonne, NASA: Q Simulation	Open BoF		Open BoF
		Networking	LaRose, Hoffman: Cirq for NISQ: R & EDU	Networking	LaRose, Hoffman: Cirq for NISQ: R & EDU	Networking	LaRose, Hoffman: Cirq for NISQ: R & EDU	Networking		Networking
		Networking	Eldredge-Giani, US Energy & GE: Renewable Energy	Networking	Eldredge-Giani, US Energy & GE: Renewable Energy	Networking	Eldredge-Giani, US Energy & GE: Renewable Energy	Networking		Networking
		Colorado	Holmes, DeBenedictis: Techology Roadmap for QC	Colorado	Holmes, DeBenedictis: Techology Roadmap for QC	Colorado	Holmes, DeBenedictis: Techology Roadmap for QC	Colorado		Colorado

Legend

Keynote Room—Eagle	Tutorial Room—Bear 1, 2, 3, 4	Workshop Room—Elk 1, 2, 3, 4, 5
Panel Room—Moose	Technical Paper Room—Bighorn 1, 2	Birds of a Feather (BoF) Room—Hawk
Exhibits Rooms—Patrons	Poster Room—Bison	Networking Room—Wise-Owl 1, 2

V80 — QCE20 — IEEE Quantum Week Advance Program — Monday, October 12, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
08:00–19:45	Mon-ONB-10	Onboard	Discover1	QCE20 Welcome, Onboarding & Quote of the Day
08:00–19:45	Mon-OVE-10	Onboard	Discover2	QCE20 Daily Sessions Overview & Announcements
08:30–10:00	Mon-KEY-11	Keynote	Eagle	Announcements, Awards Keynote: Jerry Chow, IBM Quantum, USA Quantum Circuits: Rocket Fuel for the Future of Quantum Hardware Session Chair: Hausi Müller, University of Victoria
10:00–10:45	Mon-KEY-12	Network	Eagle	Hang out with Keynote Speaker Jerry Chow
10:00–10:45	Mon-EBLU-12	Exhibit	Bluefors	Bluefors — Scheduled Exhibits
10:00–10:45	Mon-EQM-12	Exhibit	QM	Quantum Machines (QM) — Scheduled Exhibits
10:00–10:45	Mon-EPAS-12	Exhibit	Pasqal	Pasqal — Scheduled Exhibits
10:00–10:45	Mon-POS-12	Posters	Bison	Quantum Information Science Tools — Session Chair: Andreas Bergen, engageLively Pos1: Milan Williams, Elisa Zhao Hang, Adinawa Adjagbodjou, Robert Krueger and Johanna Beyer: QuVis: A Quantum Circuit Visualization Tool for Novices Pos2: Alena Mastiukova, Evgeniy Kiktenko, Aleksey Fedorov: Suppressing decoherence in quantum systems with unitary operations
10:00–10:45	Mon-BOF-12	BoF	Hawk	Open BoF Session
10:00–10:45	Mon-NW1-12	Network	WiseOwl1	Networking Session — Meet Quantum Newcomers
10:00–10:45	Mon-NW2-12	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
10:00–10:45	Mon-COL-12	Break	Rockies	Relax in Beautiful Colorado
10:45–11:15	Mon-QIA1-13	Paper	Bighorn1	Paper Session Quantum Information & Algorithms QIA1 — Session Chair: Ojas Parekh, Sandia National Laboratory QIA1: Ewout van den Berg, IBM T.J. Watson Research Center. Quantum phase estimation with optimized sample complexity
11:15–11:45	Mon-QIA1-13	Paper	Bighorn1	QIA1: Hiroshi Yano, Yudai Suzuki, Rudy Raymond, Naoki Yamamoto Keio University and IBM Research Tokyo. Efficient discrete feature encoding for variational quantum classifier
11:45–12:15	Mon-QIA1-13	Paper	Bighorn1	QIA1: William Cappelletti, Rebecca Erbanni, Joaquín Keller, Entropica Labs, Singapore. Polyadic quantum classifier
10:45–11:45	Mon-PAN-13	Panel	Moose	Panel: Building a Fault-Tolerant Quantum Computer from the Ground Up Organizers/Panelists: Sivan, Quantum Machines; Biercuk, Q-CTRL; Peronnin, Alice&Bob
10:45–12:15	Mon-TUT-13	Tutorial	Bear1	Part 1: Introduction to Quantum Computing—Pakin: Los Alamos National Laboratory; Rieffel, NASA Ames Session Chair: Candace Culhane, Los Alamos National Laboratory (LANL)
10:45–12:15	Mon-TUT-13	Tutorial	Bear2	Part 1: Quantum Programming: An Introduction—Asfaw, IBM Quantum Session Chair: Scott Koziol, Baylor University
10:45–12:15	Mon-TUT-13	Tutorial	Bear3	Part 1: Hands-on Simulation of a Quantum Network—Van Meter, Satoh, Keio University Session Chair: Bruce Kraemer, IEEE Quantum Initiative

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
10:45–12:15	Mon-WKS-13	Workshop	Elk1	Part 1: Software for Quantum Applications, Algorithms, and Workflows—Scholten: IBM Quantum; Greenberg: Facebook AI Session Chair: Hausi Müller, University of Victoria
10:45–12:15	Mon-WKS-13	Workshop	Elk2	Part 1: Semiconductor-Inspired Engineering for Quantum Computing—Mohiyaddin, Radu: imec, Belgium Session Chair: Erik DeBenedictis, Zettaflops LLC
10:45–12:15	Mon-WKS-13	Workshop	Elk3	Part 1: Applied Quantum Artificial Intelligence—Hamilton, Date: Oak Ridge National Laboratory (ORNL) Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL)
10:45–12:15	Mon-WKS-13	Workshop	Elk4	Part 1: From Qubits to Quantum Teleportation: A Hands-On Experience for High Schoolers—Angara, Stege, MacLean: University of Victoria; Markham, Knodel: Honeywell Quantum Solutions; Genco: NTIA Session Chair: Ulrike Stege, University of Victoria
12:15–13:00	Mon-EIBM-14	Exhibit	IBM	IBM Quantum — Scheduled Exhibits
12:15–13:00	Mon-ECOQ-14	Exhibit	ColdQuanta	ColdQuanta — Scheduled Exhibits
12:15–13:00	Mon-EQDE-14	Exhibit	Qdevil	QDevil — Scheduled Exhibits
12:15–13:00	Mon-ETQE-14	Exhibit	IEEE-TQE	IEEE TQE — Scheduled Exhibits
12:15–13:00	Mon-POS-14	Posters	Bison	Practical Quantum Computing & Applications — Poster Session Chair: Andreas Bergen: engageLively Pos1: James Cruise, Neil Gillespie and Brendan Reid: Practical Quantum Computing: The value of local computation Pos2: Saasha Joshi: Defence Applications of Quantum Computing
12:15–13:00	Mon-BOF-14	BoF	Hawk	BoF: CREATE Quantum Computing, British Columbia, Canada
12:15–13:00	Mon-NW1-14	Network	WiseOwl1	Networking Session — Meet Quantum Newcomers
12:15–13:00	Mon-NW2-14	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
12:15–13:00	Mon-COL-14	Break	Rockies	Relax in Beautiful Colorado — Hike the Rockies
13:00–13:30	Mon-QIA2-15	Paper	Bighorn1	Paper Session Quantum Information & Algorithms QIA2 — Session Chair: Lukasz Cincio, Los Alamos National Laboratory (LANL) QIA2: Julien Gacon, Christa Zoufal and Stefan Woerner, IBM Research Zürich and ETH Zürich. Quantum-enhanced simulation-based optimization
13:30–14:00	Mon-QIA2-15	Paper	Bighorn1	QIA2: Zsolt Tabi, Ericsson Hungary and Eötvös Loránd University; Kareem H. El-Safty, Wigner Research Centre for Physics; Zsófia Kallus, Ericsson Research Budapest; Péter Hága, Ericsson Research Budapest; Tamás Kozsik, Eötvös Loránd University; Adam Glos, Polish Academy of Sciences and Zoltán Zimborás, Wigner Research Centre for Physics and Budapest University of Technology. Quantum optimization for the graph coloring problem with space-efficient embedding
14:00–14:30	Mon-QIA2-15	Paper	Bighorn1	QIA2: Nathan Thompson, James Steck and Elizabeth Behrman, Wichita State University. A non-algorithmic approach to "programming" quantum computers via machine learning
13:00–14:30	Mon-PAN-15	Panel	Moose	Panel: Engineering Challenges in Building a Quantum Computer—Organizers: Lee, Markham: Honeywell; Genco: NTIA; Scholten: IBM Moderator: Curcic, DARPA—Panelists: Chen, Google Quantum AI; Chow, IBM Quantum; Langer, Honeywell; Roetteler, Microsoft Quantum
13:00–14:30	Mon-TUT-15	Tutorial	Bear1	Part 2: Introduction to Quantum Computing—Pakin: Los Alamos National Laboratory; Rieffel, NASA Ames
13:00–14:30	Mon-TUT-15	Tutorial	Bear2	Part 2: Quantum Programming: An Introduction—Asfaw, IBM Quantum Session Chair: Scott Koziol, Baylor University
13:00–14:30	Mon-TUT-15	Tutorial	Bear3	Part 2: Hands-on Simulation of a Quantum Network—Van Meter, Satoh, Keio University Session Chair: Bruce Kraemer, IEEE Quantum Initiative
13:00–14:30	Mon-WKS-15	Workshop	Elk1	Part 2: Software for Quantum Applications, Algorithms, and Workflows—Scholten: IBM Quantum; Greenberg: Facebook AI
13:00–14:30	Mon-WKS-15	Workshop	Elk2	Part 2: Semiconductor-Inspired Engineering for Quantum Computing—Mohiyaddin, Radu: imec, Belgium Session Chair: Erik DeBenedictis, Zettaflops LLC Laboratory (ORNL)
13:00–14:30	Mon-WKS-15	Workshop	Elk3	Part 2: Applied Quantum Artificial Intelligence—Hamilton, Date: Oak Ridge National Laboratory (ORNL) Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL)
13:00–14:30	Mon-WKS-15	Workshop	Elk4	Part 2: From Qubits to Quantum Teleportation: A Hands-On Experience for High Schoolers—Angara, Stege, MacLean: University of Victoria; Markham, Knodel: Honeywell Quantum Solutions; Genco: NTIA Session Chair: Ulrike Stege, University of Victoria

V80 — QCE20 — IEEE Quantum Week Advance Program — Monday, October 12, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
14:30–15:15	Mon-EHWE-	Exhibits	Honeywell	Honeywell Quantum Solutions — Scheduled Exhibits
14:30–15:15	Mon-ENCS-16	Exhibits	NC-State	NC State — Scheduled Exhibits
14:30–15:15	Mon-ECMC-16	Exhibits	CMC.ca	CMC.ca — Scheduled Exhibits
14:30–15:15	Mon-ETQC-16	Exhibits	ACM-TQC	ACM TQC — Scheduled Exhibits
14:30–15:15	Mon-POS-16	Posters	Bison	Open Posters
14:30–15:15	Mon-BOF-16	BoF	Hawk	Open BoF Session
14:30–15:15	Mon-NW1-16	Network	WiseOwl1	Networking Session — Meet Quantum Experts
14:30–15:15	Mon-NW2-16	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
14:30–15:15	Mon-COL-16	Break	Rockies	Relax in Beautiful Colorado — Ski the Rockies

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
15:15–15:45	Mon-QIA3-17	Paper	Bighorn1	Paper Session Quantum Information & Algorithms QIA3 — Paper Session Chair: Stuart Hadfield, NASA Ames QIA3: Andreas Bärtschi and Stephan Eidenbenz. Grover mixers for QAOA, Los Alamos National Laboratory. Shifting complexity from mixer design to state preparation
15:45–16:15	Mon-QIA3-17	Paper	Bighorn1	QIA3: Jeremy Cook, Stephan Eidenbenz and Andreas Bärtschi, Los Alamos National Laboratory. The quantum alternating operator Ansatz on Max-k Vertex Cover
15:15–15:45	Mon-QENG-17	Paper	Bighorn2	Paper Session Quantum Engineering QENG — Session Chair: Luke Govia Sahar Daraeizadeh, Shavindra Premaratne and Anne Matsuura, Intel Labs. Designing high-fidelity multi-qubit gates for semiconductor quantum dots through deep reinforcement learning
15:45–16:15	Mon-QENG-17	Paper	Bighorn2	QENG: Detection-Based Measurement for Quantum Emulation Devices—Lanham, La Cour: UT Austin

V80 — QCE20 — IEEE Quantum Week Advance Program — Monday, October 12, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
15:15–16:45	Mon-TUT-17	Tutorial	Bear1	Part 3: Introduction to Quantum Computing—Pakin: Los Alamos National Laboratory; Rieffel, NASA Ames
15:15–16:45	Mon-TUT-17	Tutorial	Bear2	Part 3: Quantum Programming: An Introduction—Asfaw, IBM Quantum Session Chair: Scott Koziol, Baylor University
15:15–16:45	Mon-TUT-17	Tutorial	Bear3	Part 3: Hands-on Simulation of a Quantum Network—Van Meter, Satoh, Keio University Session Chair: Bruce Kraemer, IEEE Quantum Initiative
15:15–16:45	Mon-WKS-17	Workshop	Elk1	Part 3: Software for Quantum Applications, Algorithms, and Workflows—Scholten: IBM Quantum; Greenberg: Facebook AI
15:15–16:45	Mon-WKS-17	Workshop	Elk2	Part 3: Semiconductor-Inspired Engineering for Quantum Computing—Mohiyaddin, Radu: imec, Belgium Session Chair: Erik DeBenedictis, Zettaflops LLC
15:15–16:45	Mon-WKS-17	Workshop	Elk3	Part 3: Applied Quantum Artificial Intelligence—Hamilton, Date: Oak Ridge National Laboratory (ORNL) Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL)
15:15–16:45	Mon-WKS-17	Workshop	Elk4	Part 3: From Qubits to Quantum Teleportation: A Hands-On Experience for High Schoolers—Angara, Stege, MacLean: University of Victoria; Markham, Knodel: Honeywell Quantum Solutions; Genco: NTIA Session Chair: Ulrike Stege, University of Victoria

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
16:45–17:30	Mon-EQUA-18	Exhibits	Quantropi	Quantropi — Scheduled Exibits
16:45–17:30	Mon-EINT-18	Exhibits	IntelLabs	Intel Labs — Scheduled Exibits
16:45–17:30	Mon-POS-18	Posters	Bison	Open Posters
14:30–15:15	Mon-BOF-18	BoF	Hawk	Open BoF Session
16:45–17:30	Mon-NW1-18	Network	WiseOwl1	Networking Session — Meet Quantum Experts
16:45–17:30	Mon-NW2-18	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
16:45–17:30	Mon-COL-18	Break	Rockies	Relax in Beautiful Colorado — Enjoy Nature
17:30–19:00	Mon-KEY-19	Keynote	Eagle	Announcements, Awards Keynote: Michelle Simmons, Founder, Silicon Quantum Computing, Sydney, Australia Session Chair: Greg Byrd, NC-State University Engineering Qubits in Silicon with Atomic Precision
19:00–19:45	Mon-KEY-20	Network	Eagle	Hang out with Keynote Speaker Michelle Simmons
19:00–19:45	Mon-EXOP-20	Exhibits	Patrons	Open Exhibits
19:00–19:45	Mon-POSO20	Posters	Bison	Open Posters
14:30–15:15	Mon-BOFO-20	BoF	Hawk	Open BoF Session
19:00–19:45	Mon-NW1-20	Network	WiseOwl1	Networking Session — Meet Quantum Experts
19:00–19:45	Mon-NW2-20	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
19:00–19:45	Mon-COL-20	Break	Rockies	Relax in Beautiful Colorado — Enjoy Nature

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
08:00–19:45	Tue-ONB-10	Onboard	Discover1	QCE20 Welcome, Onboarding & Quote of the Day
08:00–19:45	Tue-OVE-10	Onboard	Discover2	QCE20 Daily Sessions Overview & Announcements
08:30–10:00	Tue-KEY-11	Keynote	Eagle	Announcements, Awards Keynote: Patty Lee, Honeywell Quantum Solutions, USA High Performance Quantum Computing with Trapped Ions Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL)
10:00–10:45	Tue-KEY-12	Network	Eagle	Hang out with Keynote Speaker Patty Lee
10:00–10:45	Tue-EKEY-12	Exhibit	Keysight	Keysight — Scheduled Exhibits
10:00–10:45	Tue-ETOP-12	Exhibit	Toptica	Toptica — Scheduled Exhibits
10:00–10:45	Tue-EELY-12	Exhibit	Elyah	Elyah — Scheduled Exhibits
10:00–10:45	Tue-EOXF-12	Exhibit	Oxford-Inst	Oxford Instruments — Scheduled Exhibits
10:00–10:45	Tue-POS-12	Posters	Bison	Poster Session on Ion Trap Hardware and Software Technologies 1 — Session Chair: Tom Markham, Honeywell Quantum Solutions Pos1: Virginia Frey, Richard Rademacher, Noah Greenberg, Nikolay Videnov, Matthew Day, Crystal Senko and Rajibul Islam: A unified software control system for open-access trapped ion quantum computers Pos2: Richard Rademacher, Virginia Frey, Noah Greenberg, Nikolay Videnov, Matthew Day, Crystal Senko and Rajibul Islam: A unified electronic control system for open-access trapped ion quantum computers
10:00–10:45	Tue-BOF-12	BoF	Hawk	IEEE Concil on Superconductivity (CSC) BoF
10:00–10:45	Tue-NW1-12	Network	WiseOwl1	Networking Session — Meet Quantum Newcomers
10:00–10:45	Tue-NW2-12	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
10:00–10:45	Tue-COL-12	Break	Rockies	Relax in Beautiful Colorado
10:45–11:15	Tue-QCSC1-13	Paper	Bighorn1	Paper Session on Quantum Communications, Sensing & Cryptography QCSC1 — Session Chair: Lajos Hanzo, University of Southampton QCSC1: Patricio Fuentes, Josu Etxezarreta Martinez, Pedro M. Crespo, Tecnun – University of Navarra and Javier Garcia-Frías, University of Delaware. Performance of non-CSS LDGM-based quantum codes over the Misidentified Depolarizing Channel
11:15–11:45	Tue-QCSC1-13	Paper	Bighorn1	QCSC1: Josu Etxezarreta Martinez, Patricio Fuentes, Pedro M. Crespo, Tecnun – University of Navarra and Javier Garcia-Frías, University of Delaware. Pauli channel online estimation protocol for quantum turbo codes
11:45–12:15	Tue-QCSC1-13	Paper	Bighorn1	QCSC1: Muyuan Li, Georgia Institute of Technology and Theodore Yoder, IBM T.J. Watson Research Center. A numerical study of Bravyi-Bacon-Shor and subsystem hypergraph product codes
10:45–11:15	Tue-QASN1-13	Paper	Bighorn2	Paper Session on Quantum Applications and Nature Simulation QASN1 — Session Chair: Reena Dayal Yadav, Microsoft QASN1: Khaled Kelany, Nikitas Dimopoulos, Clemens Adolphs, Bardia Barabadi and Amirali Baniasadi, University of Victoria. Quantum annealing approaches to the phase-unwrapping problem in synthetic-aperture radar imaging
11:15–11:45	Tue-QASN1-13	Paper	Bighorn2	QASN1: Francesco Tacchino, Panagiotis Barkoutsos, Chiara Macchiavello, Dario Gerace, Ivano Tavernelli and Daniele Bajoni, IBM Research Europe, Zürich and University of Pavia. Variational learning for quantum artificial neural networks

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
10:45–12:15	Tue-TUT-13	Tutorial	Bear1	Part 1: Introduction to Azure Quantum—Tibble, Granade, Prawiroatmodjo, Soeken, Shaffer: Microsoft Azure Quantum Session Chair: Scott Koziol, Baylor University
10:45–12:15	Tue-TUT-13	Tutorial	Bear2	Part 1: Quantum Machine Learning for Data Scientists—Fuller: IBM Quantum; Zoufal: IBM Quantum & ETH Zürich Session Chair: Bruce Kraemer, IEEE Quantum Initiative
10:45–12:15	Tue-TUT-13	Tutorial	Bear3	Part 1: Practical Quantum Programming—Gottlieb, D-Wave Systems Session Chair: Catherine McGeoch, D-Wave Systems
10:45–12:15	Tue-TUT-13	Tutorial	Bear4	Part 1: Quantum Hardware Control: A Hands-on Introduction—Alexander, Earnest: IBM Quantum Session Chair: Elie Track, nVizix LLC
10:45–12:15	Tue-WKS-13	Workshop	Elk1	Part 1: Engineering Trapped Ion Quantum Computers—Lee, Markham, Belt, Lytle, Markham, Mathewson: Honeywell Quantum Solutions; Genco: NTIA Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL)
10:45–12:15	Tue-WKS-13	Workshop	Elk2	Part 1: Architectural Guidelines and Best Practices for Scalable Circuit QED Quantum Computing—Thiele, Kirste, Mahajan: Zurich Instruments; Wilhelm-Mauch: Saarland University Session Chair: Kristel Michielson, Forschungszentrum Jülich GmbH
10:45–12:15	Tue-WKS-13	Workshop	Elk3	Part 1: Solution Architecture for Quantum Hardware & Software Development—Khan: Khalifa U, Abu Dhabi; Bleiler: Portland State U; Reinhardt: Quantum Computing Inc., Leesburg; Weinstein: MITRE Corp; Dridi: Quantum Computing Session Chair: Erik DeBenedictis, Zettaflops LLC
10:45–12:15	Tue-WKS-13	Workshop	Elk4	Part 1: Quantum Software Engineering and Technology—Pérez-Castillo: University of Castilla-La Mancha, Spain; Piattini, Peterssen, Hevia: aQuantum, Spain Session Chair: Hausi Müller, University of Victoria
12:15–13:00	Tue-EHWE-14	Exhibit	Honeywell	Honeywell Quantum Solutions — Scheduled Exhibits
12:15–13:00	Tue-ECTR-14	Exhibit	Q-Ctrl	Q-Ctrl — Scheduled Exhibits
12:15–13:00	Tue-EIQM-14	Exhibit	IQM	IQM — Scheduled Exhibits
12:15–13:00	Tue-POS-14	Posters	Bison	Poster Session on Ion Trap Hardware and Software Technologies 2 — Session Chair: Winfried Hensinger, University of Sussex Pos1: Tomas Navickas, Mitchell Peaks, Chris Knapp, Christophe Valahu, Foni R. Lebrun-Gallagher, Martin Siegele, Reuben K. Puddy, Seokjun Hong, David F. Murgia, Eamon D. Standing, Adam M. Lawrence, Zak D. Romaszko, Sebastian Weidt and Winfried K. Hensinger: Towards high-fidelity logical gates with trapped ion qubits Pos2: Quentin Bodart, Foni Lebrun-Gallagher, Nicholas Johnson, Martin Siegele, Seokjun Hong, Sebastian Weidt and Winfried Hensinger: Constructing a scalable trapped-ion quantum computer demonstrator device Pos3: Samuel Hile, Alex Owens, David Bretaud, Raphael Lebrun, Martin Siegele, Seokjun Hong, Reuben Puddy, Sebastian Weidt and Winfried Hensinger: Engineering a scalable logical qubit in a 2D surface ion trap array Pos4: David Bretaud, Samuel Hile, Alexander Owens, Daisy Smith, Sebastian Weidt, Florian Mintert and Winfried Hensinger: Open source quantum code compilation for scalable trapped ion quantum processors Pos5: Mark Webber, Steven Herbert, Sebastian Weidt and Winfried Hensinger: Enabling global connectivity in a shuttling based trapped ion quantum computer with efficient routing
12:15–13:00	Tue-BOF-14	BoF	Hawk	Open BoF Session
12:15–13:00	Tue-NW1-14	Network	WiseOwl1	Networking Session — Meet Quantum Newcomers
12:15–13:00	Tue-NW2-14	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
12:15–13:00	Tue-COL-14	Break	Rockies	Relax in Beautiful Colorado — Hike the Rockies

V80 — QCE20 — IEEE Quantum Week Advance Program — Tuesday, October 13, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
13:00–13:30	Tue-QCSC2-15	Paper	Bighorn1	Paper Session on Quantum Communications, Sensing & Cryptography QCSC2 — Session Chair: Helena Zhang, IBM Quantum QCSC2: Omar Amer, Walter O. Krawec and Bing Wang, University of Connecticut. Efficient routing for quantum key distribution Networks
13:30–14:00	Tue-QCSC2-15	Paper	Bighorn1	QCSC2: Boxi Li, ETH Zürich; Tim Coopmans and David Elkouss, Delft University of Technology. Efficient optimization of cut-offs in quantum repeater chains
13:00–13:30	Tue-QASN2-15	Paper	Bighorn2	Paper Session on Quantum Applications and Nature Simulation QASN2 — Session Chair: Irene Qualters, Los Alamos National Laboratory (LANL) QASN2: Adam Holmes and Anne Matsuura, Intel Labs. Efficient quantum circuits for accurate preparation of smooth, differentiable quantum states
13:30–14:00	Tue-QASN2-15	Paper	Bighorn2	QASN2: Nicolas Sawaya, Gian Giacomo Guerreschi and Adam Holmes, Intel Labs. On connectivity-dependent resource requirements for digital quantum simulation of d-level particles
13:00–14:30	Tue-TUT-15	Tutorial	Bear1	Part 2: Introduction to Azure Quantum—Tibble, Granade, Prawiroatmodjo, Soeken, Shaffer: Microsoft Azure Quantum
13:00–14:30	Tue-TUT-15	Tutorial	Bear2	Part 2: Quantum Machine Learning for Data Scientists—Fuller: IBM Quantum; Zoufal: IBM Quantum & ETH Zürich
13:00–14:30	Tue-TUT-15	Tutorial	Bear3	Part 2: Practical Quantum Programming—Gottlieb, D-Wave Systems
13:00–14:30	Tue-TUT-15	Tutorial	Bear4	Part 2: Quantum Hardware Control: A Hands-on Introduction—Alexander, Earnest: IBM Quantum
13:00–14:30	Tue-WKS-15	Workshop	Elk1	Part 2: Engineering Trapped Ion Quantum Computers—Lee, Markham, Belt, Lytle, Markham, Mathewson: Honeywell Quantum Solutions; Genco: NTIA
13:00–14:30	Tue-WKS-15	Workshop	Elk2	Part 2: Architectural Guidelines and Best Practices for Scalable Circuit QED Quantum Computing—Thiele, Kirste, Mahajan: Zurich Instruments; Wilhelm-Mauch: Saarland University
13:00–14:30	Tue-WKS-15	Workshop	Elk3	Part 2: Solution Architecture for Quantum Hardware & Software Development—Khan: Khalifa U, Abu Dhabi; Bleiler: Portland State U; Reinhardt: Quantum Computing Inc., Leesburg; Weinstein: MITRE Corp; Dridi: Quantum Computing
13:00–14:30	Tue-WKS-15	Workshop	Elk4	Part 2: Quantum Software Engineering and Technology—Pérez-Castillo: University of Castilla-La Mancha, Spain; Piattini, Peterssen, Hevia: aQuantum, Spain
14:30–15:15	Tue-EMIC-16	Exhibits	Microsoft	Microsft Quantum - Scheduled Exhibits
14:30–15:15	Tue-EXAN-16	Exhibits	Xanadu	Xanadu - Scheduled Exhibits
14:30–15:15	Tue-EseQ-16	Exhibits	seeQC	seeQC - Scheduled Exhibits
14:30–15:15	Tue-POS-16	Posters	Bison	Poster Session on Ion Trap Hardware and Software Technologies 3 — Session Chair: Patty Lee, Honeywell Quantum Solutions Pos1: David Allcock, Chris Ballance, Sébastien Bourdeauducq, Joseph Britton, Michal Gaska, Thomas Harty, Jakub Jarosinski, Robert Jördens, Paweł Kulik, David Nadlinger, Krzysztof Pozniak, Tomasz Przywozki, Daniel Slichter, Mikolaj Sowinski, Weida Zhang and Grzegorz Kasprowicz: Sinara: An Open Hardware Ecosystem for Quantum Physics Pos2: Miguel Usach, Jon Kraft and Fintan Leamy: Low noise controllers for Ion-Trap Quantum Computers
14:30–15:15	Tue-BOF-16	BoF	Hawk	Open BoF Session
14:30–15:15	Tue-NW1-16	Network	WiseOwl1	Networking Session — Meet Quantum Experts
14:30–15:15	Tue-NW2-16	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
14:30–15:15	Tue-COL-16	Break	Rockies	Relax in Beautiful Colorado — Ski the Rockies

V80 — QCE20 — IEEE Quantum Week Advance Program — Tuesday, October 13, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
15:15–15:45	Tue-QCSC3-17	Paper	Bighorn1	**Paper Session on Quantum Communications, Sensing & Cryptography QCSC3 — Session Chair: Michel Barbeau, Carleton University** **QCSC3: Randy Kuang and Nicolas Bettenburg, Quantropi Inc., Ottawa. Quantum public key distribution using randomized Glauber states**
15:45–16:15	Tue-QCSC3-17	Paper	Bighorn1	**QCSC3: Andrew Reinders, Santosh Ghosh, Rafael Misoczki and Manoj Sastry, Intel Labs. Efficient BIKE hardware design with constant-time decoder**
16:15–16:45	Tue-QCSC3-17	Paper	Bighorn1	**QCSC3: Noel De la Cruz, Uttam Paudel, Ethan Tucker, Andrew Mollner, Joseph Betser, Pavel Ionov, Joseph Touch and Joshua Stoermer, The Aerospace Corporation El Segundo, California. Decoy-state quantum key distribution with direct modulated commercial off-the-shelf VCSEL lasers**
15:15–16:45	Tue-TUT-17	Tutorial	Bear1	**Part 3: Introduction to Azure Quantum—Tibble, Granade, Prawiroatmodjo, Soeken, Shaffer: Microsoft Azure Quantum**
15:15–16:45	Tue-TUT-17	Tutorial	Bear2	**Part 3: Quantum Machine Learning for Data Scientists—Fuller: IBM Quantum; Zoufal: IBM Quantum & ETH Zürich**
15:15–16:45	Tue-TUT-17	Tutorial	Bear3	**Part 3: Practical Quantum Programming—Gottlieb, D-Wave Systems**
15:15–16:45	Tue-TUT-17	Tutorial	Bear4	**Part 3: Quantum Hardware Control: A Hands-on Introduction—Alexander, Earnest: IBM Quantum**
15:15–16:45	Tue-WKS-17	Workshop	Elk1	**Part 3: Engineering Trapped Ion Quantum Computers—Lee, Markham, Belt, Lytle, Markham, Mathewson: Honeywell Quantum Solutions; Genco: NTIA**
15:15–16:45	Tue-WKS-17	Workshop	Elk2	**Part 3: Architectural Guidelines and Best Practices for Scalable Circuit QED Quantum Computing—Thiele, Kirste, Mahajan: Zurich Instruments; Wilhelm-Mauch: Saarland University**
15:15–16:45	Tue-WKS-17	Workshop	Elk3	**Part 3: Solution Architecture for Quantum Hardware & Software Development—Khan: Khalifa U, Abu Dhabi; Bleiler: Portland State U; Reinhardt: Quantum Computing Inc., Leesburg; Weinstein: MITRE Corp; Dridi: Quantum Computing**
15:15–16:45	Tue-WKS-17	Workshop	Elk4	**Part 3: Quantum Software Engineering and Technology—Pérez-Castillo: University of Castilla-La Mancha, Spain; Piattini, Peterssen, Hevia: aQuantum, Spain**
16:45–17:30	Tue-EIBM-18	Exhibits	IBM	**IBM Quantum — Scheduled Exhibits**
16:45–17:30	Tue-EZAP-18	Exhibits	Zapata	**Zapata Computing — Scheduled Exhibits**
16:45–17:30	Tue-POS-18	Posters	Bison	**Poster Sesion on Ion Trap Hardware and Software Technologies 4 — Session Chair: Tom Markham, Honeywell Quantum Solutions** **Pos1: Dave Campagna and Tom Markham: Engineering mid-circuit measurement** **Pos2: Ryan Daniel: Cryotronics Test Chamber** **Pos3: Ryan Jacobs: Automated testing methods of surface ion traps in quantum computing** **Ion Trap Hardware and Software Technologies 3 — PosterSession Chair: Tom Markham, Honeywell Quantum Solutions**
16:45–17:30	Tue-BOF-18	BoF	Hawk	**Open BoF Session**
16:45–17:30	Tue-NW1-18	Network	WiseOwl1	**Networking Session — Meet Quantum Experts**
16:45–17:30	Tue-NW2-18	Network	WiseOwl2	**Networking Session — Meet Quantum Enthusiasts**
16:45–17:30	Tue-COL-18	Break	Rockies	**Relax in Beautiful Colorado — Enjoy Nature**

V80 — QCE20 — IEEE Quantum Week Advance Program — Tuesday, October 13, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
19:00–19:45	Tue-KEY-19	Keynote	Eagle	Announcements, Awards Keynote: Yu Chen, Google AI Quantum Lab, USA Developing Technologies Towards a Error-Corrected Quantum Computer Candace Culhane, Los Alamos National Laboratory (LANL)
19:00–19:45	Tue-KEY-20	Network	Eagle	Hang out with Keynote Speaker Yu Chen
19:00–19:45	Tue-EERO-18	Exhibit	EeroQ	EeroQ - Scheduled Exhibits
19:00–19:45	Tue-EXOP-20	Exhibits	Patrons	Open Exhibits
19:00–19:45	Tue-POSO20	Posters	Bison	Open Posters
19:00–19:45	Tue-BOFO-20	BoF	Hawk	Open BoF Session
19:00–19:45	Tue-NW1-20	Network	WiseOwl1	Networking Session — Meet Quantum Experts
19:00–19:45	Tue-NW2-20	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
19:00–19:45	Tue-COL-20	Break	Rockies	Relax in Beautiful Colorado — Enjoy Nature

V80 — QCE20 — IEEE Quantum Week Advance Program — Wednesday, October 14, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
08:00–19:45	Wed-ONB-10	Onboard	Discover1	QCE20 Welcome, Onboarding & Quote of the Day
08:00–19:45	Wed-OVE-10	Onboard	Discover2	QCE20 Daily Sessions Overview & Announcements
08:30–10:00	Wed-KEY-11	Keynote	Eagle	**Announcements, Awards** **Keynote: Krysta Svore, Microsoft Research, USA** **Quantum Learning: Applying Quantum Ideas to Classical Computing** **Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL)**
10:00–10:45	Wed-KEY-12	Network	Eagle	Hang out with Keynote Speaker Krysta Svore
10:00–10:45	Wed-EIQM-12	Exhibit	IQM	IQM —Scheduled Exhibits
10:00–10:45	Wed-ENET-12	Exhibit	netlabs	netlabs — Scheduled Exhibits
10:00–10:45	Wed-EDEL-12	Exhibit	Delft-Circuits	Delft Circuits — Scheduled Exhibits
10:00–10:45	Wed-EOXF-12	Exhibit	Oxford-Inst	Oxford Instruments — Scheduled Exhibits
10:00–10:45	Wed-POS-12	Posters	Bison	Poster Session on Hybrid Quantum-Classical Computing and Applications — Session Chair: Ulrike Stege, University of Victoria Pos1: Daniel Claudino, Jerimiah Wright, Alexander McCaskey, Dmitry Lyakh and Travis Humble: VQE Approaches for Quantum Chemistry in XACC Pos2: Prashanti Priya Angara: Problem Solving in the NISQ Era: Exploring Hybrid Quantum-Classical Approaches
10:00–10:45	Wed-BOF-12	BoF	Hawk	Open BoF Session
10:00–10:45	Wed-NW1-12	Network	WiseOwl1	Networking Session — Meet Quantum Newcomers
10:00–10:45	Wed-NW2-12	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
10:00–10:45	Wed-COL-12	Break	Rockies	Relax in Beautiful Colorado
10:45–11:15	Wed-QC1-13	Paper	Bighorn2	Paper Session on Quantum Computing QC1 — Session Chair: Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL) QC1: Jun Doi and Hiroshi Horii, IBM Research Tokyo. A cache blocking technique to large scale quantum computing simulation on supercomputers
11:15–11:45	Wed-QC1-13	Paper	Bighorn2	QC1: Davis, Ethan Smith, Ana Tudor, Koushik Sen, Irfan Siddiqi, University of California Berkeley and Costin Iancu, Lawrence Berkeley National Laboratory. Towards depth optimal, topology aware quantum circuit synthesis
11:45–12:15	Wed-QC1-13	Paper	Bighorn2	QC1: Michel Barbeau, Carleton University, Joaquin Garcia-Alfaro, SAMOVAR, Telecom SudParis and Evangelos Kranakis, Carleton University. Capacity requirements of quantum repeaters
10:45–11:15	Wed-QCSC4-13	Paper	Bighorn1	Paper Session on Quantum Communications, Sensing & Cryptography QCSC4 — Session Chair: Akbar Sayeed, University of Wisconsin QCSC4: Dov Fields, City University of New York; Árpád Varga, University of Pécs,Hungary and Janos Bergou, City University of New York. Sequential measurements on qubits by multiple observers: Joint best guess strategy
11:15–11:45	Wed-QCSC4-13	Paper	Bighorn1	QCSC4: Janis Nötzel and Stephen DiAdamo, Technische Universität München. Entanglement-enhanced communication networks
11:45–12:15	Wed-QCSC4-13	Paper	Bighorn1	QCSC4: Randy Kuang and Nicolas Bettenburg, Quantropi Inc., Ottawa. Shannon perfect secrecy in a discrete Hilbert space

V80 — QCE20 — IEEE Quantum Week Advance Program — Wednesday, October 14, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
10:45–12:15	Wed-TUT-13	Tutorial	Bear1	Part 1: Quantum Algorithms for Optimization—Woerner, Scholten: IBM Quantum Session Chair: Ulrike Stege, University of Victoria
10:45–12:15	Wed-TUT-13	Tutorial	Bear2	Part 1: Quantum Machine Learning with PennyLane—Killoran, Izaac: Xanadu Toronto Session Chair: Candace Culhane, Los Alamos National Laboratory (LANL)
10:45–12:15	Wed-TUT-13	Tutorial	Bear3	Part 1: Preparing the Future Quantum Workforce—Venegas-Gomez, QURECA Ltd., Glasgow Session Chair: Bruce Kraemer, IEEE Quantum Initiative
10:45–12:15	Wed-WKS-13	Workshop	Elk1	Part 1: Quantum Curriculum Development with Microsoft Quantum Development Kit—Tsang, Mykhailova: Microsoft Quantum Research Session Chair: Scott Koziol, Baylor University
10:45–12:15	Wed-WKS-13	Workshop	Elk2	Part 1: Tuning Strategies for Quantum Annealing—Grant, ORNL; McGeoch: D-Wave Systems Session Chair: Kristel Michielson, Forschungszentrum Jülich GmbH
10:45–12:15	Wed-WKS-13	Workshop	Elk3	Part 1: Qubit Control Requirements for Practical Scalable Quantum Computation—Root: Keysight Technologies, Santa Rosa; Messaoudi: Keysight Technologies, Waterloo Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL)
10:45–12:15	Wed-WKS-13	Workshop	Elk4	Part 1: Photonics-based Quantum Computing and Simulation—Chrostowski, UBC; McKinstrie, LGS; Srinivasan, NIST Amr Helmy, University of Toronto

12:15–13:00	Wed-EMIC-14	Exhibit	Microsoft	Microsoft Quantum — Scheduled Exhibits
12:15–13:00	Wed-EQM-14	Exhibit	QM	Quantum Machines (QM) — Scheduled Exhibits
12:15–13:00	Wed-ETOP-14	Exhibit	Toptica	Toptica — Scheduled Exhibits
12:15–13:00	Wed-EZUR-14	Exhibit	Zurich-Inst	Zurich Instruments— Scheduled Exhibits
12:15–13:00	Wed-POS-14	Posters	Bison	Poster Session on Quantum Machine Learning (QML) — Session Chair: Andreas Bergen, engageLively Pos1: Siddharth Sharma: Implementing a Novel Quantum K-Nearest Neighbors Learning Algorithm for Breast Cancer Detection Pos2: Vinit Kumar Singh and Brenda Rubenstein: Quantum Neural Networks for Analyzing X-Ray Scattering Data
12:15–13:00	Wed-BOF-14	BoF	Hawk	BoF: Quantum Computing for High Energy Physics
12:15–13:00	Wed-NW1-14	Network	WiseOwl1	Networking Session Meet Quantum Newcomers
12:15–13:00	Wed-NW2-14	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
12:15–13:00	Wed-COL-14	Break	Rockies	Relax in Beautiful Colorado — Hike the Rockies

13:00–13:30	Wed-QC2-15	Paper	Bighorn1	Paper Session on Quantum Computing QC2 — Session Chair: Natalie Brown, Honeywell Quantum Solutions QC2: Elijah Pelofske, Los Alamos National Laboratory; Georg Hahn, Harvard University and Hristo Djidjev, Los Alamos National Laboratory. Advanced anneal paths for improved quantum annealing
13:30–14:00	Wed-QC2-15	Paper	Bighorn1	QC2: Wim Lavrijsen, Lawrence Berkeley National Laboratory; Ana Tudor, University of California Berkeley; Juliane Mueller, Costin Iancu and Wibe De Jong, Lawrence Berkeley National Laboratory. Classical optimizers for noisy intermediate-scale quantum devices
13:30–14:00	Wed-QC2-15	Paper	Bighorn1	QC2: Tudor Giurgica-Tiron, Yousef Hindy, Stanford University; Ryan LaRose, Michigan State University; Andrea Mari, Xanadu and William Zeng, Goldman, Sachs & Co, Unitary Fund. Portable and efficient zero noise extrapolation for quantum error mitigation

V80 — QCE20 — IEEE Quantum Week Advance Program — Wednesday, October 14, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
13:00–14:30	Wed-PAN-15	Panel	Moose	**Panel: Pivoting into Quantum Computing** **Organizers: Abraham Asfaw, Rajeev Malik, Travis Scholten: IBM Quantum** **Moderator: Travis Humble, Oak Ridge National Lab** **Panelists: Luuk Ament, Julianna Murphy, Andrew Wack, Paco Martin, Jessie Yu, Ben Fearon, IBM**
13:00–14:30	Wed-TUT-15	Tutorial	Bear1	**Part 2: Quantum Algorithms for Optimization—Woerner, Scholten: IBM Quantum**
13:00–14:30	Wed-TUT-15	Tutorial	Bear2	**Part 2: Quantum Machine Learning with PennyLane—Killoran, Izaac: Xanadu Toronto**
13:00–14:30	Wed-TUT-15	Tutorial	Bear3	**Part 2: Preparing the Future Quantum Workforce—Venegas-Gomez, QURECA Ltd., Glasgow**
13:00–14:30	Wed-WKS-15	Workshop	Elk1	**Part 2: Quantum Curriculum Development with Microsoft Quantum Development Kit—Tsang, Mykhailova: Microsoft Quantum Research**
13:00–14:30	Wed-WKS-15	Workshop	Elk2	**Part 2: Tuning Strategies for Quantum Annealing—Grant, ORNL; McGeoch: D-Wave Systems**
13:00–14:30	Wed-WKS-15	Workshop	Elk3	**Part 2: Qubit Control Requirements for Practical Scalable Quantum Computation—Root: Keysight Technologies, Santa Rosa; Messaoudi: Keysight Technologies, Waterloo**
13:00–14:30	Wed-WKS-15	Workshop	Elk4	**Part 2: Photonics-based Quantum Computing and Simulation—Chrostowski, UBC; McKinstrie, LGS; Srinivasan, NIST**
14:30–15:15	Wed-EIBM-16	Exhibits	IBM	**IBM Quantum — Scheduled Exhibits**
14:30–15:15	Wed-EZAP-16	Exhibits	Zapata	**Zapata — Scheduled Exhibits**
14:30–15:15	Wed-EALI-16	Exhibits	Aliro	**Aliro Quantum — Scheduled Exhibits**
14:30–15:15	Wed-POS-16	Posters	Bison	**Poster Session on Variational Techniques — Session Chair: Ulrike Stege, University of Victoria** **Pos1: Zak Webb: On the Universality of the Variational Quantum Eigensolver Framework** **Pos2: Slimane Thabet and Jean-Francois Hullo: Spectral embedding of graphs using quantum variational circuits**
14:30–15:15	Wed-BOF-16	BoF	Hawk	**Open BoF Session**
14:30–15:15	Wed-NW1-16	Network	WiseOwl1	**Networking Session — Meet Quantum Experts**
14:30–15:15	Wed-NW2-16	Network	WiseOwl2	**Networking Session — Meet Quantum Enthusiasts**
14:30–15:15	Wed-COL-16	Break	Rockies	**Relax in Beautiful Colorado — Ski the Rockies**
15:15–15:45	Wed-QC3-17	Paper	Bighorn1	**Paper Session on Quantum Computing QC3 — Session Chair: Andrew Sornberger, Los Alamos National Laboratory (LANL)** **QC3: Natalie Brown, Georgia Institute of Technology; Andrew Cross, IBM T.J. Watson Research Center and Kenneth Brown, Duke University. Critical faults of leakage errors on the surface code**
15:45–16:15	Wed-QC3-17	Paper	Bighorn1	**QC3: Jack Raymond, D-Wave Systems Burnaby, Guatum Rayaprolu, Ndiame Ndiaye, McGill University and Andrew King, D-Wave Systems Burnaby. Improving performance of logical qubits by parameter tuning and topology compensation**
15:45–16:15	Wed-QC3-17	Paper	Bighorn1	**QC3: Shavindra Premaratne and Anne Matsuura, Intel Labs. Engineering the cost function of a variational quantum algorithm for implementation on near-term devices**
15:15–16:45	Wed-PAN-17	Panel	Moose	**Panel on Towards a Practical Intermediate Representation (IR) for Quantum** **Organizer/Moderator: Yudong Cao: Zapata Computing** **Panelists: Blake Johnson, IBM; Sonika Johri, IonQ; Justin Hogaboam, Intel; Bettina Heim, Microsoft; Ntwali Toussaint, Zapata Computing; Will Zeng, Goldman Sachs**
15:15–16:45	Wed-TUT-17	Tutorial	Bear1	**Part 3: Quantum Algorithms for Optimization—Woerner, Scholten: IBM Quantum**
15:15–16:45	Wed-TUT-17	Tutorial	Bear2	**Part 3: Quantum Machine Learning with PennyLane—Killoran, Izaac: Xanadu Toronto**
15:15–16:45	Wed-TUT-17	Tutorial	Bear3	**Part 3: Preparing the Future Quantum Workforce—Venegas-Gomez, QURECA Ltd., Glasgow**

V80 — QCE20 — IEEE Quantum Week Advance Program — Wednesday, October 14, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
15:15–16:45	Wed-WKS-17	Workshop	Elk1	Part 3: Quantum Curriculum Development with Microsoft Quantum Development Kit—Tsang, Mykhailova: Microsoft Quantum Research
15:15–16:45	Wed-WKS-17	Workshop	Elk2	Part 3: Tuning Strategies for Quantum Annealing—Grant, ORNL; McGeoch: D-Wave Systems
15:15–16:45	Wed-WKS-17	Workshop	Elk3	Part 3: Qubit Control Requirements for Practical Scalable Quantum Computation—Root: Keysight Technologies, Santa Rosa; Messaoudi: Keysight Technologies, Waterloo
15:15–16:45	Wed-WKS-17	Workshop	Elk4	Part 3: Photonics-based Quantum Computing and Simulation—Chrostowski, UBC; McKinstrie, LGS; Srinivasan, NIST

16:45–17:30	Wed-EHWE-18	Exhibits	Honeywell	Honeywell Quantum Solutions — Scheduled Exhibits
16:45–17:30	Wed-EXAN-18	Exhibits	Xanadu	Xanadu — Scheduled Exhibits
16:45–17:30	Wed-POS-18	Posters	Bison	Open Posters
16:45–17:30	Wed-BOF-18	BoF	Hawk	Driving Collaboration in Quantum in Region 10, Quantum SIG
16:45–17:30	Wed-NW1-18	Network	WiseOwl1	Networking Session — Meet Quantum Experts
16:45–17:30	Wed-NW2-18	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
16:45–17:30	Wed-COL-18	Break	Rockies	Relax in Beautiful Colorado — Enjoy Nature

17:30–19:00	Wed-KEY-19	Keynote	Eagle	Announcements, Awards Keynote: Kae Nemoto, National Insitute of Informatics (NII), Japan The Internet of Quantum Things Amr Helmy, University of Toronto

19:00–19:45	Wed-KEY-20	Network	Eagle	Hang out with Keynote Speaker Kae Nemoto
19:00–19:45	Wed-EXOP-20	Exhibits	Patrons	Open Exhibits
19:00–19:45	Wed-POS-20	Posters	Bison	Open Posters
19:00–19:45	Wed-BOF-20	BoF	Hawk	Open BoF Session
19:00–19:45	Wed-NW1-20	Network	WiseOwl1	Networking Session — Meet Quantum Experts
19:00–19:45	Wed-NW2-20	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
19:00–19:45	Wed-COL-20	Break	Rockies	Relax in Beautiful Colorado — Enjoy Nature

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
08:00–19:45	Thu-ONB-10	Onboard	Discover1	QCE20 Welcome, Onboarding & Quote of the Day
08:00–19:45	Thu-OVE-10	Onboard	Discover2	QCE20 Daily Sessions Overview & Announcements
08:30–10:00	Thu-KEY-11	Keynote	Eagle	**Announcements, Awards** **Keynote: Alán Aspuru-Guzik, University of Toronto, Canada** **Quantum Computing for Chemistry and Materials Simulation in Near-term Devices** **Session Chair: Greg Byrd, NC State University**
10:00–10:45	Thu-KEY-12	Network	Eagle	Hang out with Keynote Speaker Alán Aspuru-Guzik
				https://www.cmc.ca/
10:00–10:45	Thu-ECMC-12	Exhibit	CMC.ca	CMC — Scheduled Exhibits
10:00–10:45	Thu-ECTR-12	Exhibit	Q-Ctrl	Q-Ctrl — Scheduled Exhibits
10:00–10:45	Thu-EBLU-12	Exhibit	Bluefors	Bluefors — Scheduled Exhibits
10:00–10:45	Thu-EZUR-14	Exhibit	Zurich-Inst	Zurich Instruments — Scheduled Exhibits
10:00–10:45	Thu-POS-12	Posters	Bison	Poster Session on Quantum Optimization 1 — Session Chair: Urike Stege, University of Victoria Pos1: Sara Ayman Metwalli, Francois Le Gall and Rodney Van Meter: A Practical Quantum Approach to the k-clique Problem Pos2: Rebekah Herrman, Phillip Lotshaw, James Ostrowski and Travis Humble: Graph Coloring, Circuit Depth, & Optimality in QAOA
10:00–10:45	Thu-BOF-12	BoF	Hawk	Open BoF Session
10:00–10:45	Thu-NW1-12	Network	WiseOwl1	Networking Session — Meet Quantum Newcomers
10:00–10:45	Thu-NW2-12	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
10:00–10:45	Thu-COL-12	Break	Rockies	Relax in Beautiful Colorado
10:45–11:15	Thu-QC4-13	Paper	Bighorn1	Paper Session on Quantum Computing QC4 — Session Chair: Megan Lilly, University of Tennessee QC4: Toshinari Itoko and Takashi Imamichi, IBM Research Tokyo. Scheduling of operations in quantum compiler
11:15–11:45	Thu-QC4-13	Paper	Bighorn1	QC4: Ellis Wilson, Sudhakar Singh and Frank Mueller, North Carolina State University. Just-in-time quantum circuit transpilation reduces noise
11:45–12:15	Thu-QC4-13	Paper	Bighorn1	QC4: Lukas Burgholzer, Johannes Kepler University Linz; Rudy Raymond, IBM Research Tokyo and Robert Wille, Johannes Kepler University Linz. Verifying results of the IBM Qiskit quantum circuit compilation flow
10:45–11:15	Thu-QEDU-13	Paper	Bighorn2	Paper Session on Quantum Education — Session Chair: Scott Koziol, Baylor University QEDU: Parham Pashaei, Haris Amiri, Rafael Haenel, Pedro Lopes and Lukas Chrostowski, The University of British Columbia. Education resources for promoting talent in quantum computing
11:15–11:45	Thu-QEDU-13	Paper	Bighorn2	QEDU: Prashanti Angara, Ulrike Stege and Andrew MacLean, University of Victoria. Quantum computing for high school students: An experience report
11:45–12:15	Thu-QEDU-13	Paper	Bighorn2	QEDU: Thomas Plunkett, Terrill Frantz, Hamida Khatri, Praveen Ragendran and Sunny Midha, Harrisburg University of Science and Technology. A Survey of Quantum Computing Workforce Education
10:45–12:15	Thu-TUT-13	Tutorial	Bear1	Part 1: Assessing the Quality of Qubits and Quantum Computers—Córcoles, Scholten: IBM Quantum Session Chair: Elie Track, nVizix LLC
10:45–12:15	Thu-TUT-13	Tutorial	Bear2	Part 1: Quantum Algorithms for Chemical Simulation—Barkoutos, Jones, Ollitrault, Earnest: IBM Quantum Session Chair: Hausi Müller, University of Victoria

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
10:45–12:15	Thu-TUT-13	Tutorial	Bear3	Part 1: Combinatorial Optimization on Quantum Computers—Shaydulin, Safro: Clemson University; Alexeev: Argonne Session Chair: Ulrike Stege, University of Victoria
10:45–12:15	Thu-WKS-13	Workshop	Elk1	Part 1: Photonic Technologies for Quantum Information Science—Chrostowski, UBC; McKinstrie, LGS; Srinivasan, NIST Amr Helmy, University of Toronto
10:45–12:15	Thu-WKS-13	Workshop	Elk2	Part 1: Cryogenic Electronics for Quantum Systems—Fahim: Fermilab, IL Charbon: EPFL, Switzerland Session Chair: Erik DeBenedictis, Zettaflops, LLC
10:45–12:15	Thu-WKS-13	Workshop	Elk3	Part 1: Practical Quantum Sensing from a Photonic and Atomic Physics Perspective—Pooser, Humble: ORNL Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL)
10:45–12:15	Thu-WKS-13	Workshop	Elk4	Part 1: IEEE P7130 Quantum Technology Nomenclature Working Group Meeting—IEEE P7130 Working Group Session Chair: Bruce Kraemer, IEEE Quantum Initiative
12:15–13:00	Thu-EZAP-14	Exhibit	Zapata	Zapata — Scheduled Exhibits
12:15–13:00	Thu-EINT-14	Exhibit	Intel-Labs	Intel Labs — Scheduled Exhibits
12:15–13:00	Thu-EPAS-14	Exhibit	Pasqal	Pasqal — Scheduled Exhibits
12:15–13:00	Thu-ETQC-14	Exhibit	ACM-TQC	ACM TQC — Scheduled Exhibits
12:15–13:00	Thu-POS-14	Posters	Bison	Poster Session on Quantum Optimization 2 — Session Chair: Andreas Bergen, engageLively Pos1: Matias Jonsson, Jason Larkin and Gian Guerreschi: Assessment of Alternative Objective Functions for Quantum Variational Combinatorial Optimization Pos2: Alex Fischer and Don Towsley: Distributing Graph States Across Quantum Networks
12:15–13:00	Thu-BOF-14	BoF	Hawk	Open BoF Session
12:15–13:00	Thu-NW1-14	Network	WiseOwl1	Networking Session — Meet Quantum Newcomers
12:15–13:00	Thu-NW2-14	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
12:15–13:00	Thu-COL-14	Break	Rockies	Relax in Beautiful Colorado — Hike the Rockies
13:00–13:30	Thu-QC5-15	Paper	Bighorn1	Paper Session on Quantum Computing QC5 — Session Chair: Alex McCaskey, Oak Ridge National Laboratory (ORNL) QC5: Mathias Soeken and Martin Roetteler, Microsoft Quantum. Quantum circuits for functionally controlled NOT gates
13:30–14:00	Thu-QC5-15	Paper	Bighorn1	QC5: Sima Esfandiarpour Borujeni, Wichita State University; Nam Nguyen, Boeing Research & Technology; Saideep Nannapaneni, Elizabeth Behrman and James Steck, Wichita State University. Experimental evaluation of quantum Bayesian networks on IBM QX hardware
14:00–14:30	Thu-QC5-15	Paper	Bighorn1	QC5: Pranav Gokhale, University of Chicago; Olivia Angiuli, University of California, Berkeley; Yongshan Ding, Kaiwen Gui, University of Chicago; Teague Tomesh, Princeton University & Argonne National Laboratory; Martin Suchara, University of Chicago & Argonne National Laboratory; Margaret Martonosi, Princeton University and Frederic T. Chong, University of Chicago. Optimization of simultaneous measurement for variational quantum eigensolver applications
13:00–14:30	Thu-PAN-15	Panel	Moose	Panel on Training the Next Generation of Quantum Scientists, Engineers, and Software Developers Organizers: Abraham Asfaw, Rajeev Malik, Travis Scholten: IBM Quantum; Moderator: Irene Qualters, LANL Panelists: Sophia Economou, Virginia Tech; Matt Langione, Boston Consulting Group; Peter Johnson, Zapata Computing; AbrahamAsfaw, IBM Quantum; Steve Sanders, Honeywell
13:00–14:30	Thu-TUT-15	Tutorial	Bear1	Part 2: Assessing the Quality of Qubits and Quantum Computers—Córcoles, Scholten: IBM Quantum
13:00–14:30	Thu-TUT-15	Tutorial	Bear2	Part 2: Quantum Algorithms for Chemical Simulation—Barkoutos, Jones, Ollitrault, Earnest: IBM Quantum
13:00–14:30	Thu-TUT-15	Tutorial	Bear3	Part 2: Combinatorial Optimization on Quantum Computers—Shaydulin, Safro: Clemson University; Alexeev: Argonne

V80 — QCE20 — IEEE Quantum Week Advance Program — Thursday, October 15, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
13:00–14:30	Thu-WKS-15	Workshop	Elk1	Part 2: Photonic Technologies for Quantum Information Science—Chrostowski, UBC; McKinstrie, LGS; Srinivasan, NIST
13:00–14:30	Thu-WKS-15	Workshop	Elk2	Part 2: Cryogenic Electronics for Quantum Systems—Fahim: Fermilab, IL Charbon: EPFL, Switzerland
13:00–14:30	Thu-WKS-15	Workshop	Elk3	Part 2: Practical Quantum Sensing from a Photonic and Atomic Physics Perspective—Pooser, Humble: ORNL
13:00–14:30	Thu-WKS-15	Workshop	Elk4	Part 2: IEEE P7130 Quantum Technology Nomenclature Working Group Meeting—IEEE P7130 Working Group
14:30–15:15	Thu-EQUA-16	Exhibits	Quantropi	Quantropi — Scheduled Exhibits
14:30–15:15	Thu-ECOQ-16	Exhibits	ColdQuanta	ColdQuanta — Scheduled Exhibits
14:30–15:15	Thu-ETQE-16	Exhibits	IEEE-TQE	IEEE TQE — Scheduled Exhibits
14:30–15:15	Thu-POS-16	Posters	Bison	Open Posters
14:30–15:15	Thu-BOF-16	BoF	Hawk	BoF: Quantum Education
14:30–15:15	Thu-NW1-16	Network	WiseOwl1	Networking Session — Meet Quantum Experts
14:30–15:15	Thu-NW2-16	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
14:30–15:15	Thu-COL-16	Break	Rockies	Relax in Beautiful Colorado — Ski the Rockies
15:15–15:45	Thu-QC6-17	Paper	Bighorn1	Paper Session on Quantum Computing QC6 — Session Chair: Pranav Gokhale, University of Chicago QC6: Thien Nguyen, Anthony Santana and Alexander McCaskey, Oak Ridge National Laboratory. Extending XACC for quantum optimal control
15:45–16:15	Thu-QC6-17	Paper	Bighorn1	QC6: C. A. Morrison, A. J. Landahl, D. S. Lobser, K. M. Rudinger, A. E. Russo, J. W. Van Der Wall and Peter Maunz, Sandia National Laboratories and University of New Mexico. Just another quantum assembly language (Jaqal)
15:15–16:45	Thu-PAN-17	Panel	Moose	Panel on Bringing Quantum Programming into Quantum Computing Education Organizer: Mark Tsang, Microsoft; Moderator: Mariia Mykhailova, Microsoft; Panelists: Mathias Soeken, EPFL/MSFT, Jens Palsberg, UCLA, Brian La Cour, UT-Austin, Rafael Sotelo, University Montevideo, George Siopsis, University of Tennessee, Christopher Ferrie, University Technology Sydney (UTS)
15:15–16:45	Thu-TUT-17	Tutorial	Bear1	Part 3: Assessing the Quality of Qubits and Quantum Computers—Córcoles, Scholten: IBM Quantum
15:15–16:45	Thu-TUT-17	Tutorial	Bear2	Part 3: Quantum Algorithms for Chemical Simulation—Barkoutos, Jones, Ollitrault, Earnest: IBM Quantum
15:15–16:45	Thu-TUT-17	Tutorial	Bear3	Part 3: Combinatorial Optimization on Quantum Computers—Shaydulin, Safro: Clemson University; Alexeev: Argonne
15:15–16:45	Thu-WKS-17	Workshop	Elk1	Part 3: Photonic Technologies for Quantum Information Science—Chrostowski, UBC; McKinstrie, LGS; Srinivasan, NIST
15:15–16:45	Thu-WKS-17	Workshop	Elk2	Part 3: Cryogenic Electronics for Quantum Systems—Fahim: Fermilab, IL Charbon: EPFL, Switzerland
15:15–16:45	Thu-WKS-17	Workshop	Elk3	Part 3: Practical Quantum Sensing from a Photonic and Atomic Physics Perspective—Pooser, Humble: ORNL
15:15–16:45	Thu-WKS-17	Workshop	Elk4	Part 3: IEEE P7130 Quantum Technology Nomenclature Working Group Meeting—IEEE P7130 Working Group
16:45–17:30	Thu-EMIC-18	Exhibits	Microsoft	Microsoft Quantum — Scheduled Exhibits
16:45–17:30	Thu-EALI-18	Exhibits	Aliro	Aliro Quantum — Scheduled Exhibits
16:45–17:30	Thu-POS-18	Posters	Bison	Open Posters
16:45–17:30	Thu-BOF-18	BoF	Hawk	Open BoF Session
16:45–17:30	Thu-NW1-18	Network	WiseOwl1	Networking Session — Meet Quantum Experts
16:45–17:30	Thu-NW2-18	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
16:45–17:30	Thu-COL-18	Break	Rockies	Relax in Beautiful Colorado — Enjoy Nature

V80 — QCE20 — IEEE Quantum Week Advance Program — Thursday, October 15, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
17:30–19:00	Thu-KEY-19	Keynote	Eagle	<u>Announcements, Awards</u> <u>Keynote: Anne Matsuura, Intel Labs, USA</u> <u>Quantum Computing: A Scalable, Systems Approach</u> <u>Session Chair: Candace Culhane, Los Alamos National Laboratory (LANL)</u>
19:00–19:45	Thu-KEY-20	Network	Eagle	Hang out with Keynote Speaker Anne Matsuura
19:00–19:45	Thu-EXOP-20	Exhibits	Patrons	Open Exhibits
19:00–19:45	Thu-POS-20	Posters	Bison	Open Posters
19:00–19:45	Thu-BOFO-20	BoF	Hawk	Open BoF Session
19:00–19:45	Thu-NW1-20	Network	WiseOwl1	Networking Session — Meet Quantum Experts
19:00–19:45	Thu-NW2-20	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
19:00–19:45	Thu-COL-20	Break	Rockies	Relax in Beautiful Colorado — Enjoy Nature

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
08:00–19:45	Fri-ONB-10	Onboard	Discover1	QCE20 Welcome, Onboarding & Quote of the Day
08:00–19:45	Fri-OVE-10	Onboard	Discover2	QCE20 Daily Sessions Overview & Announcements
08:30–10:00	Fri-KEY-11	Keynote	Eagle	Announcements, Awards, Keynote Jake Taylor, NIST, QuICS, JQI, University of Maryland, USA Advances in Quantum Information Science Session Chair: Erik DeBenedictis, Zettaflops LLC
10:00–10:45	Fri-KEY-12	Network	Eagle	Hang out with Keynote Speaker Jake Taylor
10:00–10:45	Fri-EIBM-12	Exhibit	IBM	IBM Quantum — Scheduled Exhibits
10:00–10:45	Fri-ENCS-12	Exhibit	NC-State	NC State — Scheduled Exhibits
10:00–10:45	Fri-EQDE-12	Exhibit	QDevil	QDevil — Scheduled Exhibits
10:00–10:45	Fri-POS-12	Posters	Bison	Poster Session on Quantum Simulation 1 — Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL) Pos1: Megan Lilly and Travis Humble: Evaluating Performance of Quantum Computers with Cycle Benchmarking Pos2: Paul Kairys and Travis Humble: High performance digital quantum simulation through analog control optimization
10:00–10:45	Fri-BOF-12	BoF	Hawk	Open BoF Session
10:00–10:45	Fri-NW1-12	Network	WiseOwl1	Networking Session — Meet Quantum Newcomers
10:00–10:45	Fri-NW2-12	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
10:00–10:45	Fri-COL-12	Break	Rockies	Relax in Beautiful Colorado
10:45–11:15	Fri-QBM1-13	Papers	Bighorn1	Paper Session on Quantum Benchmarks and Measurements QBM1 — Session Chair: Catherine MCGeoch, D-Wave Systems QBM1: Kathleen Hamilton, Tyler Kharazi, Titus Morris, Alex McCaskey, Ryan Bennink and Raphael Pooser, Oak Ridge National Laboratory. Scalable quantum processor noise characterization
11:15–11:45	Fri-QBM1-13	Papers	Bighorn1	QBM1: Sam Tomkins and Rogério de Sousa, University of Victoria. Noise mitigation with delay pulses in the IBM Quantum Experience
10:45–12:15	Fri-TUT-13	Tutorial	Bear1	Part 1: Cirq for NISQ: Research and Education—LaRose, Hoffman: Google AI Quantum Session Chair: Scott Koziol, Baylor University
10:45–12:15	Fri-TUT-13	Tutorial	Bear2	Part 1: Serious Games for Quantum Computing—Lahmann, Heider: IBM Germany Session Chair: Bruce Kraemer, IEEE Quantum Initative
10:45–12:15	Fri-TUT-13	Tutorial	Bear3	Part 1: Exploring the D-Wave Webinar Series—Gottlieb, D-Wave Systems Session Chair: Catherine McGeoch, D-Wave Systems
10:45–12:15	Fri-WKS-13	Workshop	Elk1	Part 1: Technology Roadmapping for Quantum Computing—Holmes, DeBenedictis: IEEE IRDS Session Chair: Erik DeBenedictis, Zettaflops, LLC
10:45–12:15	Fri-WKS-13	Workshop	Elk2	Part 1: Control and Design of Superconducting Qubits—Bronn, Minev, Scholten: IBM Quantum Session Chair: Kristel Michielson, Forschungszentrum Jülich GmbH
10:45–12:15	Fri-WKS-13	Workshop	Elk3	Part 1: Quantum Computing Entrepreneurship—Chen, Sotelo, Monaco, Stauffer, Sumner: TEMS Society & IEEE Entrepreneurship Session Chair: Hausi Müller, University of Victoria

V80 — QCE20 — IEEE Quantum Week Advance Program — Friday, October 16, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
10:45–12:15	Fri-WKS-13	Workshop	Elk4	**Part 1: Quantum Simulation—Alexeev, Otten: Argonne National Laboratory; Mandrà, NASA Ames** **Session Chair: Ulrike Stege, University of Victoria**
10:45–12:15	Fri-WKS-13	Workshop	Elk5	**Part 1: Quantum Computing Opportunities in Renewable Energy—Eldredge: U.S. Department of Energy; Giani: GE Research** **Session Chair: Travis Humble, Oak Ridge National Laboratory (ORNL)**
12:15–13:00	Fri-EMIC-14	Exhibit	Microsoft	**Microsoft Quantum — Scheduled Exhibits**
12:15–13:00	Fri-EKEY-14	Exhibit	Keysight	**Keysight — Scheduled Exhibits**
12:15–13:00	Fri-POS-14	Posters	Bison	**Poster Session on Quantum Simulation 2 — Session Chair: Andreas Bergen, engageLively** **Pos1: Teik Guan Tan and Jianying Zhou: Quantum Interpreted Circuits (QuIC): Rapidly Simulating Quantum Algorithms** **Pos2: Andrea Delgado and Travis Humble: Quantum Algorithms for Event Reconstruction and Simulation in High Energy Physics Experiments**
12:15–13:00	Fri-BOF-14	BoF	Hawk	**BoF: Quantum Science Centers, LANL, ORNL**
12:15–13:00	Fri-NW1-14	Network	WiseOwl1	**Networking Session — Meet Quantum Newcomers**
12:15–13:00	Fri-NW2-14	Network	WiseOwl2	**Networking Session — Meet Quantum Enthusiasts**
12:15–13:00	Fri-COL-14	Break	Rockies	**Relax in Beautiful Colorado — Hike the Rockies**
13:00–13:30	Fri-QBM2-15	Papers	Bighorn1	**Paper Session on Quantum Benchmarks and Measurements QBM2 — Session Chair: Joseph Emerson, Quantum Benchmark & University of Waterloo** **QBM2: Tristan Zaborniak and Rogério de Sousa, University of Victoria. In situ noise characterization of the D-Wave quantum annealer**
13:30–14:00	Fri-QBM2-15	Papers	Bighorn1	**QBM2: Samudra Dasgupta and Travis Humble, Oak Ridge National Laboratory. Characterizing the Stability of NISQ Devices**
13:00–14:30	Fri-TUT-15	Tutorial	Bear1	**Part 2: Cirq for NISQ: Research and Education—LaRose, Hoffman: Google AI Quantum**
13:00–14:30	Fri-TUT-15	Tutorial	Bear2	**Part 2: Serious Games for Quantum Computing—Lahmann, Heider: IBM Germany**
13:00–14:30	Fri-TUT-15	Tutorial	Bear3	**Part 2: Exploring the D-Wave Webinar Series—Gottlieb, D-Wave Systems**
13:00–14:30	Fri-WKS-15	Workshop	Elk1	**Part 2: Technology Roadmapping for Quantum Computing—Holmes, DeBenedictis: IEEE IRDS**
13:00–14:30	Fri-WKS-15	Workshop	Elk2	**Part 2: Control and Design of Superconducting Qubits—Bronn, Minev, Scholten: IBM Quantum**
13:00–14:30	Fri-WKS-15	Workshop	Elk3	**Part 2: Quantum Computing Entrepreneurship—Chen, Wong, Sotelo: TEMS Society & IEEE Entrepreneurship**
13:00–14:30	Fri-WKS-15	Workshop	Elk4	**Part 2: Quantum Simulation—Alexeev, Otten: Argonne National Laboratory; Mandrà, NASA Ames**
13:00–14:30	Fri-WKS-15	Workshop	Elk5	**Part 2: Quantum Computing Opportunities in Renewable Energy—Eldredge: U.S. Department of Energy; Giani: GE Research**
14:30–15:15	Fri-EHWE-16	Exhibits	Honeywell	**Honeywell Quantum Solutions — Scheduled Exhibits**
14:30–15:15	Fri-EQUA-16	Exhibits	Quantropi	**Quantropi — Scheduled Exhibits**
14:30–15:15	Fri-POS-16	Posters	Bison	**Open Posters**
14:30–15:15	Fri-BOF-16	BoF	Hawk	**Open BoF Session**
14:30–15:15	Fri-NW1-16	Network	WiseOwl1	**Networking Session — Meet Quantum Experts**
14:30–15:15	Fri-NW2-16	Network	WiseOwl2	**Networking Session — Meet Quantum Enthusiasts**
14:30–15:15	Fri-COL-16	Break	Rockies	**Relax in Beautiful Colorado — Ski the Rockies**

V80 — QCE20 — IEEE Quantum Week Advance Program — Friday, October 16, 2020

Mountain Time MDT (UTC-6)	Session Name	Session Type	Session Room	Monday Sessions
15:15–16:45	Fri-PAN-17	Panel	Moose	**Panel on Enabling and Growing the Quantum Industry** Organizers: Joe Broz, SRI International & QED-C and Celia Merzbacher, SRI International & QED-C; Moderator: Tom Ohki, Raytheon BBN; Panelists: Ricardo Borges, Synopsys; Ashley Huff, Janis Research Company; Ofer Naaman, Google; Chad Hoyt, Honeywell
15:15–16:45	Fri-TUT-17	Tutorial	Bear1	Part 3: Cirq for NISQ: Research and Education—LaRose, Hoffman: Google AI Quantum
15:15–16:45	Fri-TUT-17	Tutorial	Bear2	Part 3: Serious Games for Quantum Computing—Lahmann, Heider: IBM Germany
15:15–16:45	Fri-TUT-17	Tutorial	Bear3	Part 3: Exploring the D-Wave Webinar Series—Gottlieb, D-Wave Systems
15:15–16:45	Fri-WKS-17	Workshop	Elk1	Part 3: Technology Roadmapping for Quantum Computing—Holmes, DeBenedictis: IEEE IRDS
15:15–16:45	Fri-WKS-17	Workshop	Elk2	Part 3: Control and Design of Superconducting Qubits—Bronn, Minev, Scholten: IBM Quantum
15:15–16:45	Fri-WKS-17	Workshop	Elk3	Part 3: Quantum Computing Entrepreneurship—Chen, Wong, Sotelo: TEMS Society & IEEE Entrepreneurship
15:15–16:45	Fri-WKS-17	Workshop	Elk4	Part 3: Quantum Simulation—Alexeev, Otten: Argonne National Laboratory; Mandrà, NASA Ames
15:15–16:45	Fri-WKS-17	Workshop	Elk5	Part 3: Quantum Computing Opportunities in Renewable Energy—Eldredge: U.S. Department of Energy; Giani: GE Research
16:45–17:30	Fri-EXOP-18	Exhibits	Patrons	Open Exhibits
16:45–17:30	Fri-POS-18	Posters	Bison	Open Posters
16:45–17:30	Fri-BOF-18	BoF	Hawk	Open BoF Session
16:45–17:30	Fri-NW1-18	Network	WiseOwl1	Networking Session — Meet Quantum Experts
16:45–17:30	Fri-NW2-18	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
16:45–17:30	Fri-COL-18	Break	Rockies	Relax in Beautiful Colorado — Enjoy Nature
17:30–19:00	Fri-KEY-19	Keynote	Eagle	**Announcements, Awards** **Keynote: Alexander Condello, D-Wave Systems** **Practical Quantum Computing with D-Wave** **Session Chair: Hausi Müller, University of Victoria**
19:00–19:45	Fri-KEY-20	Network	Eagle	Hang out with Keynote Speaker Alexander Condello
19:00–19:45	Fri-EXOP-20	Exhibits	Patrons	Open Exhibits
19:00–19:45	Fri-POS-20	Posters	Bison	Open Posters
19:00–19:45	Fri-BOFO-20	BoF	Hawk	Open BoF Session
19:00–19:45	Fri-NW1-20	Network	WiseOwl1	Networking Session — Meet Quantum Experts
19:00–19:45	Fri-NW2-20	Network	WiseOwl2	Networking Session — Meet Quantum Enthusiasts
19:00–19:45	Fri-COL-20	Break	Rockies	Relax in Beautiful Colorado — Enjoy Nature