

VCEW 2022 Program

All Times Mountain Daylight Time (UTC-6)

Program Chair: Brian Hirano, Micron

Program Co-Chair: Rich Zippel, Google

Sunday June 26

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- 5:00 pm Informal gathering in the Arrabelle bar
- 6:30 pm Dinner: Arrabelle Ballroom
- 8:30 pm **Keynote: Superconducting Computers, Part Deux, Ivan Sutherland, Portland State**

Monday June 27

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- 7:30 am Continental Breakfast: Arrabelle Ballroom
- 8:15 am *Welcome: Jim Hughes, Apple, VCEW Executive Committee Chair*
- 8:20 am *Historical Perspective of VCEW, Ron Bell*
- Session 1 Processors + Quantum:**
- 8:30 am *3D V-Cache, John Wu, AMD*
- 9:20 am *Neuromorphic Computing, Mike Davies, Intel*
- 10:10am 10-Minute Break
- 10:20 am *DISCoVER (Superconductive Computation), Massoud Pedram, USC*
- 11:10 am *Computer Architecture and Multi-Fluxon Storage, Murali Annavaram, USC*
- 12:00 pm Lunch: Arrabelle Ballroom
- Session 2 Biology & Computation + Processors + Memory**
- 1:00 pm *Anton-3, Bruce Edwards, DE Shaw*
- 1:50 pm *Thread Director, Rajshree Chabukswar, Intel*
- 2:40 pm 10-Minute Break
- 2:50 pm *Challenges of Neuromorphic Circuits, Jeremy Holleman, Syntiant*
- 3:40 pm *Current and Future Trends in Memory Technology, Gurtej Sandhu, Micron*
- 4:45 pm Free transit bus to Vail Village
- 5:00 pm Reception in Vail Village
- 6:30 pm Dinner: La Nonna
- 8:00 pm Free transit bus back to Lionshead Village
- Session 3 (Virtual) Security + Processors + Consumer Electronics**
- 8:15 pm *Impact of Quantum Computing on Internet Security, Hilarie Orman, Purple Streak*
- 9:00 pm *Managing an Open and Extensible ISA, Krste Asanovic, SiFive*
- 9:45 pm *Ultra Sensitive Tactile Texture Sensors, Hidekuni Takao, Kagawa University*

Tuesday June 28

- 7:30 am Continental Breakfast: Arrabelle Ballroom
- Session 4 Quantum + Security + I/O**
- 8:30 am *Quantum Computing: the classical computing conundrum*, Andrew Wack, IBM
- 9:20 am *Quantum Key Distribution*, Antia Lamas-Linares, Amazon
- 10:10am 10-minute Break
- 10:20 am *Physically Unclonable Functions*, Rachel Parker, Intel
- 11:10 am *LightMatter Optical multi-die Interconnect*, Nick Harris, Lightmatter
- 12:00 pm Lunch: Arrabelle Ballroom
- 1:30 pm – 4:00 pm **Free time to enjoy Vail**
- 4:00 pm **Planning Session for VCEW 2023**
- 4:45 pm Free transit bus to Vail Village
- 5:00 pm Reception
- 6:30 pm Dinner: Left Bank
- 8:00 pm Free transit bus back to Lionshead Village
- Session 5 Consumer Electronics + I/O**
- 8:15 pm *Hardware Acceleration of Cryptographic Functions*, Makoto, Ikeda, University of Tokyo
- 9:00 pm *Ultra-high BW D2D Interconnects for SoCs*, Gerald Pasdast, Intel
- 9:45 pm *Integration of Microelectronics and Biology*, Thomas Chen, Colorado State University

Wednesday June 29

- 7:30 am Continental Breakfast: Arrabelle Ballroom
- Session 6 Datacenter + Software + Processors**
- 8:30 am *Datacenter Design*, Alejandra Rodriguez, Yondgroup and Nyssa Hughes, Corgan
- 9:20 am *Sustainable Datacenter Designs*, Nic Bustamante, Corscale
- 10:10 am 10-minute Break
- 10:20 am *ML Compilers for Accelerators*, Vinod Grover, NVIDIA (may be virtual)
- 11:10 am *One for All, All for One: Designing and testing Async Systems*, Marly Ronken, Portland State
- 12:00 pm *Final Thoughts*: Jim Hughes

VCEW 2022 Session Chairs

- Processors:** Yahya Sotoudeh, Intel and Edmund Gieske, Micron
- Consumer Electronics:** Atsushi Hasegawa, University of Tokyo and Yoshio Masubuchi, Kioxia
- I/O Interconnect:** Don Soltis, Intel and Steve Miller, Habana
- Security:** Amy Santoni, Intel and John Kelsey, NIST
- Software:** David Kanter, ML Commons
- Memory:** Michael Allen, ARM and David Burnett, NXP
- Datacenter:** Jim Hughes, Apple
- Biology and Computation:** Jim Mitchell
- Quantum:** Brian Thompto, AMD