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Progress and Challenges on Quantum Computer-Aided Design

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IBM Quantum Summit 2020

Tuesday - September 15, 2020

Day 1: Quantum Technology and User Ecosystem

Eastern Time	MC: Anthony Annunziata & Ken Wood (IBM)
9:30am	Welcome & the IBM Q Network Today
<i>Talk</i>	Anthony Annunziata (IBM)
9:45am	IBM Quantum Roadmap
<i>Talk</i>	Jay Gambetta (IBM)
10:10am	Promoting Quantum Science and Applications at DOE
<i>Keynote</i>	Paul Dabbar (US Department Of Energy)
10:30am	Co-Designing Hardware and Algorithms Towards Quantum Advantage
<i>Panel</i>	Jerry Chow (IBM - moderator) Andrew Houck (Princeton University) Travis Humble (OakRidge National Lab) Pri Narang (Harvard University/Aliro) Laurent White (ExxonMobil)
11:00am	Coffee Break
11:10am	Quantum Computing and the Future of Technology for Society
<i>Keynote</i>	President Gonokami (University of Tokyo)
11:30am	Quantum: A New Industry and Ecosystem
<i>Panel</i>	Anthony Annunziata (IBM - moderator) Hiroaki Aihara (University of Tokyo) Torsten Siebert (Fraunhofer Institutes) Jeff Nichols (OakRidge National Lab) Timothy Lawrence (US Air Force Research Lab)
12:05pm	Developing our Energy Future
<i>Keynote</i>	Vijay Swarup (ExxonMobil)
12:20pm	Lunch Break (40min) w/ Byte-Size Wellness
1:00pm	Building a Community with Open Source
<i>Panel</i>	Liz Durst (IBM - moderator) Amira Abbas (University of KwaZulu-Natal) Farai Mazhandu (OneQuantum) Sabrina Maniscalco (University of Turku) Rajiv Krishnakumar (Goldman Sachs) Arman Zaribafiyani (1Qbit)
1:45pm	Coffee Break
2:00pm	The Essential Link Between Academia and Industry
<i>Keynote</i>	Chancellor Woodson (North Carolina State University), intro by Jamie Thomas (IBM)
2:15pm	Quantum Hubs to Advance Education and Research
<i>Panel</i>	Jamie Thomas (IBM - moderator) Dan Stancil (North Carolina State University) Vincent Aimez (University of Sherbrooke) Irene Qualters (Los Alamos National Lab) Dominic O'Brien (Oxford University) Kohei Itoh (Keio University)
3:00pm	END of Day1 scheduled program
<i>On-Demand</i>	On-demand content available

IBM Quantum Summit 2020

Wednesday - September 16, 2020

Day 2: Industry Engagement and Developers

Eastern Time MC: Katie Pizzolato (IBM)

9:30am **Welcome from IBM**

Talk Anthony Annunziata (IBM)

9:45am **Quantum Computing: Our Final Frontier in Computing**

Keynote Sungwoo Hwang (Samsung Advanced Institute of Technology)

10:00am **Effort and Future Expectation for Quantum Computing in Japan**

Keynote Yasuhiro Sato (Mizuho Bank, Head of QIIC)

10:10am **The Promise of Quantum for Industry**

Panel Anthony Annunziata (IBM - moderator)

Amy Herhold (ExxonMobil)

Jay Lowell (Boeing)

Ben Boeser (Daimler)

Jamie Garcia (IBM)

10:45am **Coffee Break**

11:00am **Technical Updates: Quantum Application Research & Development**

Series of Talks Katie Pizzolato (IBM) - Intro to Applications R&D with the Q Network

Qi Gao (Mitsubishi Chemical)

Dimitar Trenev (ExxonMobil)

Gavin Jones (IBM)

Nikitas Stamatopoulos (Goldman Sachs)

Tomoki Tanaka (MUFG)

12:00pm **Enabling Quantum Application Developers**

Series of Talks Gilad Ben-Shach (IBM) - Intro to Commercial Partner Ecosystem

Bob Coecke (Cambridge Quantum Computing)

William Simon (Zapata Computing)

Iordanis Kerenidis (QWare)

Andre Carvalho (Q-CTRL)

12:45pm **Lunch Break (45min) w/ Cooking Demonstration**

Talks + Panel **Abstraction Without Trivialization: The Path to Practical Development**

1:30pm Blake Johnson (IBM)

1:45pm **New Developments in Qiskit Applications Modules**

Stefan Woerner (IBM)

Panos Barkoutsos (IBM) + Dimitar Trenev (ExxonMobil)

Christa Zoufal (IBM)

2:05pm **Enabling the Enterprise Developer**

Panel Sebastian Hassinger (IBM - moderator)

William Hurley (Strangeworks)

Carl Dukatz (Accenture)

David Maziotti (University of Chicago)

Larry Grace (Amgen)

Will Zeng (Goldman Sachs)

2:35pm **Bridge to Quantum Computation: QRNG, HPC, QSC**

Series of Talks Chris Schnabel (IBM) - Intro

Florian Curchod (Cambridge Quantum Computing)

Jessie Yu (IBM)

Seetharami Seelam (IBM)

Michael Osborne (IBM)

3:20pm **END of Day2 scheduled program**

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IBM Quantum Summit 2020

Thursday - September 17, 2020

Day 3: Science and Education

- Eastern Time** MC: Abe Asfaw (IBM)
- 9:30am** **Welcome from IBM**
Talk Anthony Annunziata (IBM)
- 9:45am** **NSF's Historic Leadership in Quantum Science and Quantum Workforce Development**
Interview France A. Cordova (Former NSF Director) with Scott Crowder (IBM)
- 10:05am** **Educating and Enabling A Diverse Quantum Workforce**
Panel Discussion - Part I
Panel Olivia Lanes (IBM - moderator)
 Marina Radulaski (University of California - Davis)
 Sophia Economou (Virginia Tech)
 Rod van Meter (Keio University)
 Hakan Tureci (Princeton University)
- 10:35am** Panel Discussion - Part II
Panel Kayla Lee (IBM - moderator)
 Thomas Searles (Howard University)
 Serena Eley (Colorado School of Mines)
 Christopher Gutiérrez (UCLA)
 Clarice Aiello (UCLA)

11:05am Coffee Break

- 11:15am** **Talks on Research and Education**
Series of Talks Alberto Di Meglio (CERN)
 Barry Dwolatzky (Wits University)
 Jelena Vuckovic (Stanford University)
 Fred Chong (University of Chicago)
 Aram Harrow (MIT)
 Patrick Dreher (NC State)
 Sergey Bravyi (IBM)
- 12:25pm** **Expanding US Leadership in Quantum Information Science**
Keynote Charles Tahan (White House Office of Science and Technology Policy)
- 12:40pm** **Advancing Science and Technology of Quantum**
Panel Zaira Nazario (IBM - moderator)
 Steve Girvin (Yale University)
 David Awschalom (University of Chicago)
 Oliver Ambacher (Fraunhofer Institutes)
 Michael Cuthbert (National Quantum Computing Center, UK)

1:10pm Lunch Break (50min) w/ Musical Entertainment

- 2:00pm** **Talks on Research and Education**
Series of Talks Frank Wilhem-Mauch (Saarland University)
 Javad Shabani (NYU)
 Mariya Vyushkova (Notre Dame University)
 David Gosset (University of Waterloo)
 Yonatan Cohen (Quantum Machines)
 Lev Bishop (IBM)
 Aida Todri-Sanial (University of Montpellier)
- 3:10pm** **Closing of formal portion of Quantum Summit**
 Anthony Annunziata (IBM)
- 3:20pm** **END of Day3 scheduled program**
On-Demand On-demand content available