Program - 6th Multicore World

*Draft v4.0 (subject to changes) – **Updated 16th February 2017***

Day 1 – Monday 20th February 2017

8:20 – 8:40 Opening Welcome – Setting the Scene

Nicolás Erdödy (Open Parallel)

8:40 – 9:10 **Japanese plans for Open High Performance Computing and Big Data / Artificial Intelligence Infrastructure**

Prof. Satoshi Matsuoka – Professor, Tokyo Institute of Technology and Fellow, Advanced Institute for Science and Technology, Japan

9:15 – 10:00 **Keynote - The Revolution in Experimental and Observational Science: The Convergence of Data-Intensive and Compute-Intensive Infrastructure**

Prof. Tony Hey – Chief Data Scientist, Science & Technology Facilities Council (STFC), UK

10:00 – 10:30 – Morning Tea

10:30 – 11:15 **Keynote - The Quantum Revolution: Computing, past, present and future**

Prof. Michelle Y. Simmons – Scientia Professor of Physics, University of New South Wales, Australia. Director, Centre for Quantum Computation & Communication Technology, School of Physics, UNSW. Australian Research Council Laureate Fellow

11:20 – 12:00 **Panel - From a Multicore World to the Exascale Era -and beyond! What could happen? What NEEDS to happen?**

Prof. Satoshi Matsuoka (Japan) – Moderator, Prof. Michelle Y. Simmons (Australia), Pete Beckman (US), Dave Jaggar (NZ), Prof. Michael Kelly (UK-NZ), Prof. Tony Hey (UK)

12:10 – 1:10 Lunch

1:10 – 1:35 **HPC/Cloud Hybrids for Efficient Resource Allocation and Throughput**

Lev Lafayette – HPC Support & Training Officer, The University of Melbourne, Australia

1:40 - 2:10 **The ASKAP Science Data Processor system: A Computing precursor of the SKA**

Juan Carlos Guzman – Head of the ATNF Software and Computing Group, Australia

2:15 – 3:00 **Keynote** - **Supercomputer Resilience – Then, Now, and Tomorrow**

Nathan DeBardeleben – Senior research scientist at Los Alamos National Laboratory in High Performance Computing Design and the lead of the Ultrascale Systems Research Center. USA.

3:00 – 3:30 Afternoon Tea

3:30 – 4:15 **Panel** – **BD / AI / ML / IoT / C@E / Deep Learning, etc, etc...Which is the Real Technology Behind These Trendy Buzzwords?**

Pete Beckman (US) - Moderator, Paul Fenwick (Australia), Prof Michael Kelly (UK-NZ), John Gustafson (Singapore), Paul McKenney (US), Prof Satoshi Matsuoka (Japan)

4:15 – 5:00 **Keynote - Parallel Computing at the Edge: Technology for Chicago Street Poles and for Exascale Systems**

Pete Beckman – Co-Director, Northwestern-Argonne Institute for Science and Engineering, Argonne National Laboratory, USA. Leads Projects Argo Exascale Operating System, Waggle – Sensors for the Array of Things

5:00 – 5:15 Debate

5:15 – 7:00 Light Dinner

Day 2 – Tuesday 21st February 2017

8:30 – 8:40 - General Information and Recap

Nicolás Erdödy (Open Parallel)

8:45 – 9:25 - **Keynote - OpenStack for HPC in Africa**

Happy Sithole – Director, Centre for High Performance Computing, South Africa

9:30 – 10:00 – **Ministerial Address**

The Honourable Paul Goldsmith, New Zealand's Minister for Science and Innovation, Minister of Tertiary Education, Skills and Employment, and Minister for Regulatory Reform

10:00 – 10:30 Morning Tea

10:30 – 11:15 **Keynote - Extreme Scale Multi-tasking using DALiuGE**

Prof. Andreas Wicenec – Professor of Data Intensive Research, ICRAR, Perth, Australia. Task leader of the Data Layer for the SKA Science Data Processor

11:15 – 11:40 **Update on New Zealand SKA Alliance participation in the SKA project**

Andrew Ensor – Director, New Zealand SKA Alliance

11: 45 – 12:15 **Panel – Towards the SKA 2018 Tender: Challenges and Opportunities**

Simon Rae (NZ) – Moderator, Prof. Tony Hey (UK), Happy Sithole (South Africa), Andrew Ensor (NZ), Juan Carlos Guzman (Australia), Prof Andreas Wicenec (Australia)

12:20 – 1:20 Lunch

1:20 – 1:50 **SKA - SDP Middleware: open and collaborative HPC in the SKA**

Piers Harding – Senior Consultant, Catalyst IT, New Zealand

1:50 – 2:10 **IHK/McKernel: A Lightweight Multi-kernel based Operating System for Extreme Scale HPC**

Balasz Gerofi – Research Scientist in the System Software Research Team at RIKEN Advanced Institute for Computational Science (AICS) – Japan

2:15 – 3:00 **Keynote - Does RCU Really Work?**

Paul McKenney – IBM Distinguished Engineer, IBM Linux Technology Center, USA

3:00 – 3:30 Afternoon Tea

3:30 – 4:15 **Panel – Where is New Zealand's ICT / High-Tech Ecosystem Heading?**

Victoria Mclennan (2016 ICT NZer of the year) – Moderator, **Clare Curran, MP** (Labour Party ICT Spokesperson), **Ralph Highnam** (CEO, Volpara Technologies), **Guy Kloss** (Qrious), **Mark Moir** (Oracle), **Dave Jaggar** (ex-ARM)

4:15 – 5:00 **Keynote - The Future Is Awesome (and what you can do about it)**

Paul Fenwick – Public speaker, open source authority, and science educator. Managing Director, Perl Training, Australia.

5:00 – 5:15 Debate

5:15 – 7:00 Light Dinner

Day 3 – Wednesday 22nd February 2017

8:45 – 8:55 General Information and Recap

8:55 – 9:05 The Exascale Institute -and other projects from and for New Zealand

Nicolás Erdödy (Open Parallel)

9:10 – 10:00 **Keynote -** **FLOPS to BYTES: Accelerating Beyond Moore's Law**

Satoshi Matsuoka – Professor, Tokyo Institute of Technology and Fellow, Advanced Institute for Science and Technology, **Japan**

10:0 – 10:30 Morning Tea

10:30 – 11:15 **Panel – Does Big Science necessarily mean Big Budgets?**

Prof. Michael Kelly (UK-NZ) - Moderator, Prof. Andreas Wicenec (Australia), Dr. Happy Sithole (South Africa), Dr. Andrew Ensor (New Zealand), Dr. John Gustafson (Singapore), Pete Beckman (US), Prof Satoshi Matsuoka (Japan)

11:15 – 12:00 **Keynote - Beating Floats at Their Own Game: Faster Hardware and Better Answers**

John Gustafson – Visiting Scientist at A*STAR and Professor in the School of Computing at the National University of Singapore. He is a former Director at Intel Labs and the former Chief Product Architect at AMD.

12:00 – 1:00 Lunch

1:00 – 1:30 **Why are still failing to attract and retain women in STEM?**

Victoria Maclennan – Managing Director, Optimal BI; 2016 New Zealand ICT Professional of the Year; Co-Chair NZ Rise.

1:30 – 2:00 **Breast imaging analytics that improve clinical decision-making and the early detection of breast cancer**

Ralph Highnam – CEO, Volpara Solutions, New Zealand

2:05 – 2:50 **Panel – Enterprise Systems: How big is the gap to reach 21st century performance? How will legacy code and hardware be updated?**

Mark Moir (Oracle, NZ-US) – Moderator, Victoria Maclennan (Optimal BI, NZ), Paul McKenney (IBM, US), Paul Fenwick (Perl, Australia), John Gustafson (ex-Intel, AMD, Sun, Singapore), Nathan DeBardeleben (LANL, US)

2:50 – 3:15 Afternoon Tea

3:15 – 4:00 **Keynote - How Might the Manufacturability of the Hardware at Device Level Impact on Exascale Computing?**

Prof Michael J Kelly – MacDiarmid Institute for Advanced Materials and Nanomaterials, Victoria University of Wellington, New Zealand, and Department of Engineering, University of Cambridge, United Kingdom.

4:05 – 4:50 **Keynote - The ARM Architecture – From Sunk to Success**

Dave Jaggar – former ARM's Head of Architecture Design, New Zealand

4:55 – 5:10 Conference Wrap-up. Feedback: Towards Multicore World 2018

Nicolás Erdödy (Open Parallel)

5:15 – 6:30 Drinks and Nibbles
