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UQ physicists taming the quantum world

Two UQ physicists have taken to the big screen to explain how the weird and wonderful world of quantum principles is being tamed to advance our future technologies.

Professor Gerard Milburn and Professor Andrew White will appear alongside some of the world's brightest minds, including Stephen Hawking and quantum teleportation expert, Anton Zeilinger, in a documentary entitled Quantum Tamers: Revealing our weird and wired future, to be shown in Canada this week.

The documentary brings together a stellar line-up of quantum experts to explore promising future technologies involving super quantum computers, ultra secure quantum codes to safeguard our communications, and even teleportation.

Although quantum principles are not fully understood, quantum technologies are already responsible for many advances in technology we already use including lasers and their many applications, magnetic resonance imaging (MRIs), modern micro circuitry, plus CDs and DVDs.

Professor Milburn, Director of the Centre for Quantum Computer Technology said that quantum information was stored as Qbits and allowed data to be stored in patterns known as quantum weirdness.

He said the film examined putting quantum weirdness to work in new communications and computation protocols.

"The past few generations of physicists, when troubled by the undeniable weirdness of the quantum world, and how impossible it is to picture, were told to 'shut up and calculate,'" he said.

"Now we tell them to 'shut up and fabricate', meaning we can now use this weirdness to advance our technologies."

The producers of The Quantum Tamers were also making a documentary aimed at high-school kids called "The Quantum Challenge", to which Professor Andrew White was asked to contribute.

"While filming my pieces for The Quantum Challenge, the producers asked me to do a few more bits as well, which I did. These ended up in the film The Quantum Tamers; it was by chance I came to be in the film," Professor White said.

Quantum Tamers world premier will screen on October 17 at the Princess Twin Cinema in Waterloo, Ontario, Canada as part of the Perimeter Institute's Quantum to Cosmos: Ideas for the Future (Q2C) Festival.

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Professor Milburn and Professor White will both be in Waterloo for the festival and will participate in a number of events including the opening night screening.

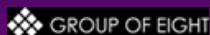
Q2C is 10 exciting days for the audience to explore the strange world of subatomic particles to the outer frontiers of the universe.

Gerard Milburn is a professor of physics at The University of Queensland and the Director of the Centre for Quantum Computer Technology; an Australian Research Council Centre of Excellence. His work includes quantum optics, quantum measurement and stochastic processes, atom optics, quantum chaos, mesoscopic electronics and most recently in quantum information and quantum computation.

Andrew White is a professor of physics at The University of Queensland and the Director of the Quantum Technology Laboratory. In 2003 he and his colleagues produced the first entangling quantum-logic gate. His research interests include quantum information, quantum optics—all aspects of quantum weirdness really—and biophysics.

Media: For more information please contact Lynelle Ross (07 3346 9935 or l.ross@smp.uq.edu.au). For more information about Q2C visit www.q2cfestival.com/ or The Quantum Tamers (www.electricsky.com/catalogue_detail.aspx?program=2178).

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