



**COLLEGE OF AGRICULTURE,
ENGINEERING AND SCIENCE**

In Celebration of SAIP National Science Week

THE COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE
School of Chemistry and Physics,

Cordially invite you to attend a

PUBLIC TALK

Big Data, the 4th Industrial Revolution, and 2nd Quantum Revolution

By

Professor Francesco Petruccione

University of KwaZulu-Natal, South Africa

Date:

Wednesday, 1st August 2018

Venue:

Senate Chamber, Westville Campus

Time:

16h00 for 16h30

INSPIRING GREATNESS



SYNOPSIS

We are living in exciting times, in which the traditional “offline” world is constantly “online” and where this new “online” world is influencing more and more the “offline” one. The fourth Industrial Revolution is centred around the convergence of cyber-physical systems, the Internet of Things and the Internet of Systems. At the same time, we are experiencing the 2nd Quantum Revolution, which exploits the “spooky” properties of Quantum Mechanics, to give us access to formidable new technologies, such as quantum metrology, quantum communication and quantum computing. The talk explains how the emerging quantum technologies are crucial to the success of the Big Data centred new world.

Professor Francesco Petruccione



Francesco Petruccione was born in 1961 in Genova (Italy). He studied Physics at the University of Freiburg i. Br. and received his PhD in 1988. He was conferred the “Habilitation” degree (Dr. rer. nat. habil.) from the same University in 1994. In 2004 he was appointed Professor of Theoretical Physics at the University of KwaZulu-Natal, in Durban (South Africa). In 2005 he was awarded an Innovation Fund grant to set up a Centre for Quantum Technology. In 2007 he was granted a South African Research Chair for Quantum Information Processing and Communication. At present, he is also one of the Deputy Directors of the National Institute for Theoretical Physics.

He has published more than 170 papers in refereed scientific journals. He is the co-author of a monograph on “The Theory of Open Quantum Systems” (about 6000 citations according to Google Scholar), that was published in 2002, reprinted as paperback in 2007, and recently translated in Russian. He is a member the Editorial Board of “Open Systems and Information Dynamics” and “Scientific Reports”. He is the editor of several proceedings volumes and of special editions of scientific journals. He is currently writing a book on Quantum Machine Learning.