Nov 9, 2016: Professor Lynn Conway's Citation for the Degree Doctor of Engineering, *Honoris Causa,* University of Victoria.

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Madam Chancellor, I have the privilege of speaking about the extraordinary accomplishments of Lynn Conway: brilliant computer scientist and engineer, innovative educator, and advocate for transgender rights. She is a technological revolutionary whose discoveries opened the floodgates of creativity for countless engineers, computer scientists, and entrepreneurs. Professor Conway's ideas are all around us today – in computers, tablets, smartphones, GPS, self-driving cars … indeed, in almost all modern technology.

In 1963 Lynn Conway completed graduate work in electrical engineering and computer science at Columbia University. She was quickly recruited by IBM Research where she invented a ground-breaking technique which dramatically increased computer

performance by arranging and executing instructions far more efficiently, and still, 50 years on, a standard technique in today's computers. Sadly, IBM fired her in 1968 as she underwent gender transition. She had to rebuild her career in "stealth" with a new name and identity.

Starting all over again, Lynn joined Memorex in 1969 and moved to Xerox's Palo Alto Research Centre in '73. Silicon Valley in the 70's: What an exhilarating time and place this must have been – technological innovations coming thick and fast – and Lynn Conway was in the heart of it all!

It was becoming clear that methods of digital circuit design current at the time could not handle the complexity that new technology would demand. Research into how best to create the micro-processors of the future was needed. And here Lynn Conway shone. Combining her earlier work at IBM with the latest technologies from Silicon Valley, and collaborating with researchers in academia and industry, she "launched into hyperdrive". Lynn invented a revolutionary new

streamlined methodology for designing Very Large Scale Integrated (VLSI) circuits on tiny silicon chips and, along with Carver Mead, co-authored the foundational engineering text on the subject: *Introduction to VLSI Systems*.

In 1978 Lynn created and taught a wildly successful course at MIT based upon the book. Her new methods allowed silicon chip creators to burst through a logjam of arcane and convoluted methods, releasing a torrent of design creativity. She changed intractable chip creation processes into clean, clear, and concise design methods. Lynn went on to create an Internet e-commerce system for rapid silicon-chip prototyping. As many graduating here will tell you, today this process is standard – in 1978 it was a game changer – a new paradigm was launched and the computer chip revolution was off and running.

Lynn Conway continued to work in industry, government and academia, joining the University of Michigan in 1985 as Professor of Electrical Engineering Computer Science and Associate Dean of Engineering. Just before retirement in 1999 she faced ‘outing’ after

reports about her early work at IBM began surfacing. As Conway's biography notes: "With a growing sense of pride in her accomplishments, she overcame her fears, quietly came out via the Internet, and gradually created a major transgender advocacy website." Named in 2014 by Time Magazine as one of 25 transgender people who have influenced American culture, Lynn Conway and her website lynnconway.com provide a beacon of hope and offer tremendous resources for trans people world-wide.

Over the years Lynn has received many major awards. She is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), and a Member of the National Academy of Engineering and the Electronic Design Hall of Fame. Her recent Computer History Museum Fellow award was given in honour of her world changing accomplishments, and, in 2015 she received the prestigious IEEE/Royal Society of Edinburgh James Clerk Maxwell Medal. In his citation Barry Shoop, President of IEEE called Professor Conway "a true giant of our age": A revolutionary giant whom we at UVic are proud to celebrate.

Madam Chancellor, I have the honour to present Lynn Ann Conway for the degree of Doctor of Engineering *Honoris Causa*.