



Making waves

A scientist whose study of black holes has transformed modern-day telecommunications proves it's worth paying attention in science class, writes **Blanche Clark**

DR JOHN O'Sullivan was blown away when he won the \$300,000 Prime Minister's Prize for Science last week.

But like many school students, there was a time when O'Sullivan had no idea what career to pursue.

"I was keen on science. My mum used to bring home books from the library and I read everything I could get my hands on about the astronauts," the CSIRO electrical engineer says.

"I got keen in chemistry, and then a physics teacher, just the way he thought about things and presented things, captured my interest and inspired me to work out some things on my own."

A school visit to Sydney University's electrical engineering school was the catalyst for his stellar career.

"There was one simple experiment there, a spinning disc with a magnet across it generating

an electric current, and I couldn't for the life of me see how it worked, but I thought it was wonderful," he says. "That caused me to think I wanted to be an electrical engineer."

He earned a double degree in engineering and physics and went on to do a PhD in radio astronomy.

"The further I went in university the more I enjoyed it. I think what I got out of university and school was a love of learning," O'Sullivan says.

He also discovered technology changes quickly and scientists need to adapt and learn more.

"And it's good to be, in retrospect, out of your comfort zone; that's when you achieve more," he says.

O'Sullivan was awarded the Prime Minister's Prize for Science for helping invent a chip that allows mobile phones, laptops and printers to connect to the internet through a high-speed wireless network or wi-fi.

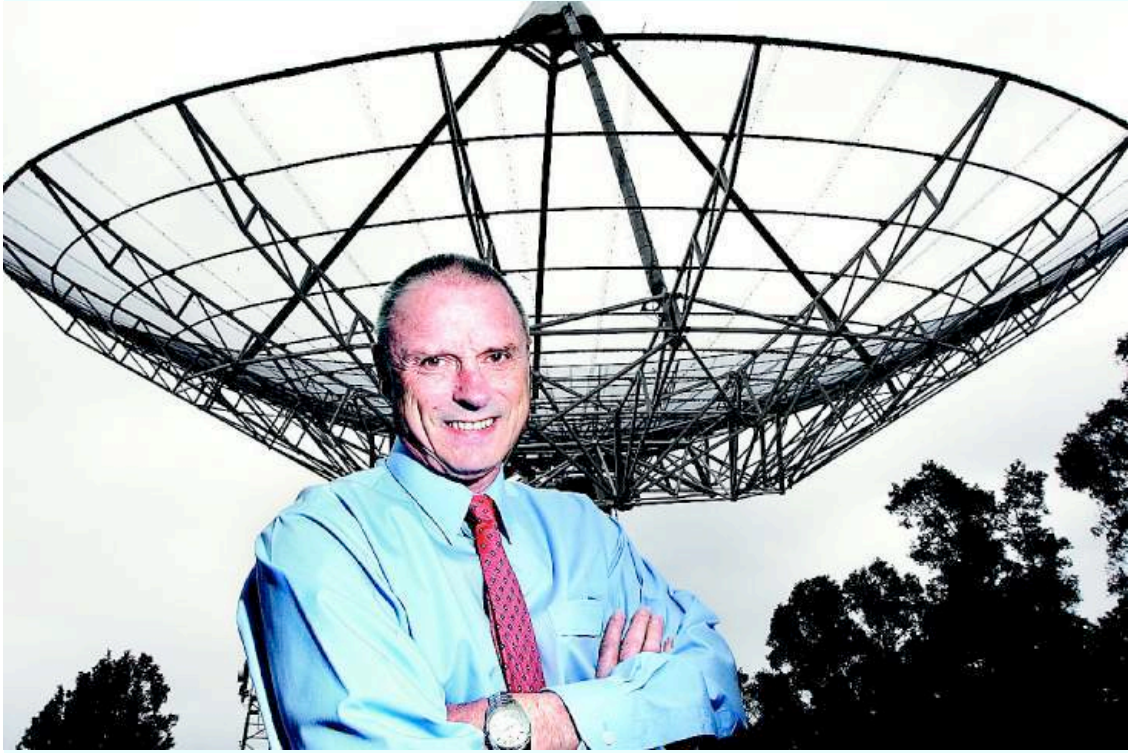
The technology is used every day in about one billion devices around the world and stems from O'Sullivan's earlier work searching for radio waves from exploding black holes.

Using techniques he'd applied to astronomy, O'Sullivan and his team at CSIRO figured out how to reduce the interference created by radio waves bouncing off structures. This led to the creation of the technology that has revolutionised wireless networking.

CSIRO has reaped \$200 million from its Wireless Local Area Network (WLAN) technology after a long but successful court battle with 14 of the world's biggest technology companies.

Last week it was announced it has pumped \$150 million from the proceeds into the national Science and Industry Endowment Fund.

O'Sullivan is also considering donating some of his prize to support research.



Inquiring mind: CSIRO scientist Dr John O'Sullivan was inspired by his physics teacher.

Picture: RENEE NOWYTARGER