Garvan Institute of Medical Research

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GARVAN INSTITUTE
Breakthrough Medical Research

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"Breakthrough! The detection of gravitational waves from a neutron star merger"

Monday 19 November 2018 12PM, AUDITORIUM

Host: Prof Mark Febbraio

ABSTRACT: On August 17th 2017 the LIGO-Virgo interferometer detected gravitational waves from a neutron star merger in a galaxy 130 million light years away. This was a breakthrough for physics and astronomy. What followed was a frenzy of activity as astronomers around the world worked to detect electromagnetic radiation with conventional telescopes. After this unprecedented effort the event was detected in gamma-rays, x-rays, visible light and radio waves. I will discuss this incredible scientific result and its implications, including: predictions made by Einstein; the production of gold and other heavy elements; and our understanding of black hole formation. I will also give a 'behind the scenes' perspective of how it happened, and discuss the changes in the way we do science in this era of big astronomy.

Associate Professor Tara Murphy is an astrophysicist working at the University of Sydney and an Australian Research Council Future Fellow. She has a Bachelor of Science from the University of Sydney and a PhD in astrophysics from the University of Edinburgh. Tara leads an international team of researchers trying to detect and study transient and highly variable astrophysical phenomena with the MWA and ASKAP radio telescopes in Western Australia. In 2017 her team detected the first radio emission from a gravitational wave event caused by the merger of two neutron stars. Tara is also passionate about teaching and public outreach. In 2014 she co-founded a start-up company, Grok Learning, to get high school students around the world excited about computational thinking.