



Media release

Monday, 11 July 2022

Heart attack prediction using AI is on the horizon

Revolutionary technology designed to accurately predict heart attacks will be showcased on Tuesday at Melbourne's premier science event, the Bionics Institute 2022 Graeme Clark Oration.

Developed by international researcher Professor Natalia Trayanova (Johns Hopkins University, USA), the artificial intelligence and bioengineering tool could prove to be life-saving for more [than four million Australians affected by cardiovascular disease \(CVD\)](#).

Using data-driven machine learning and biophysics-based modelling, Professor Trayanova has created 'digital heart twins' – virtual replicas of a person's heart that can be used to forecast progress of heart disease, estimate the risk of heart attacks and inform treatment decisions.

"My AI technology uses algorithms created from MRIs and PET scans, in combination with deep learning of clinical data, to predict a patient's risk of sudden cardiac death over a period of ten years," Professor Trayanova said.

The application of Professor Trayanova's technology could be key to reducing the burden on our country's healthcare system, as CVD costs the Australian economy [almost \\$12 billion annually](#) (2018-2019).

She explained: "I envisage a future where re-hospitalisations and repeat procedures are reduced; shifting heart disease treatment options from being based on the state of the patient today, to optimising the state of the patient for the future."

Bionics Institute CEO Mr Robert Klupacs says the Institute is proud to be principal sponsor of the 2022 Graeme Clark Oration, a prestigious science event with a long history of showcasing eminent biomedical scientists.

"Over 1000 Melburnians have registered to join us the Oration and learn about the future of heart healthcare from Professor Trayanova – a pioneer in the field of computational cardiology. This is an event not to be missed," he said.

Free tickets are still available for the Bionics Institute 2022 Graeme Clark Oration.

To register your attendance visit: <http://www.graemeclarkoration.org.au/index.html>

About the 2022 Graeme Clark Oration

Date: Tuesday, 12 July 2022

Time: 6.00-7.30pm

Location: Melbourne Convention and Exhibition Centre, South Wharf, Melbourne

MEDIA CONTACT: Breanna Smith 0499 399 510 bsmith@bionicsinstitute.org

Cost: Free

[Tickets available here.](#)

Background: The Graeme Clark Oration informs the community about scientific advances in health and medical research, delivered by recognised global leaders in their field. The Oration was established in honour of Professor Graeme Clark AC, who discovered how to code speech with electrical stimulation of the auditory nerve and brain pathways to restore hearing to over 600,000 severely-to-profoundly deaf people in more than 100 countries.

About the Orator

- Learn about [Professor Natalia Trayanova](#).
- Read [a plain-English summary of her recent paper](#) published in [Nature Cardiovascular Research](#).

Available for interview

- Professor Natalia Trayanova – Murray B Sachs Professor, Johns Hopkins University (USA).
- Robert Klupacs – CEO, Bionics Institute.