

Name

Susannah Hallal

Position & Affiliation

Postdoctoral Researcher, Chris O'Brien Lifehouse

Full Reference

“Machine learning models detect blood ‘fingerprints’ for accurate glioblastoma tumour surveillance”
Susannah Hallal, Ágota Túzesi, Abhishek Vijayan, Laveniya Satgunaseelan, Hao-Wen Sim, Brindha Shivalingam, Michael E. Buckland, Fatemeh Vafae and Kimberley L. Alexander

Conference/Meeting Name

International Society for Extracellular Vesicles Annual Meeting 2024

Location

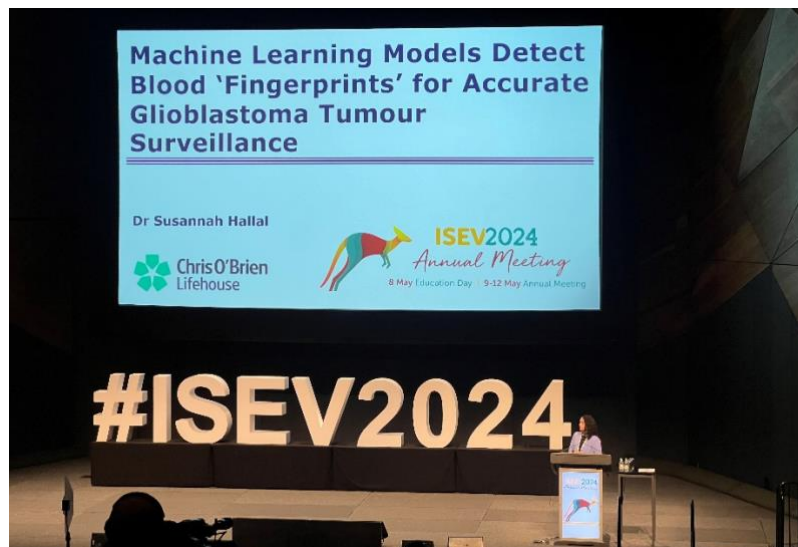
Melbourne, Victoria, Australia

Dates

9-12th May 2024

Presentation Type

Featured oral presentation in a plenary session



Dr Susannah Hallal presenting at the ISEV2024 Annual Meeting at the Melbourne Convention and Exhibition Centre. The presentation was focused on developing blood tests for glioblastomas, the most common and aggressive brain tumours in adults (image captured, Friday 10th May 2024).

On the 9th-12th May 2024, I attended the International Society for Extracellular Vesicles Annual Meeting 2024 held at the Melbourne Convention and Exhibition Centre. This meeting boasted a global audience of over 1000 researchers specialising in extracellular vesicles. The theme of the ISEV2024 meeting was “Discover, Innovate and Understand”, encapsulating the breadth of the groundbreaking research that was presented. Attendees had diverse interests spanning bacterial and plant biology, cancer biomarkers, cancer metastasis, therapeutics and nanotechnology.

Each morning, a plenary session was scheduled which included captivating talks from keynote speakers, followed by presentations from the most highly scored featured abstracts and event

sponsors. While there were only four plenary sessions, each offered valuable insights into the breadth of extracellular vesicle research, and their application for understanding and treating disease. Specifically, the function of extracellular vesicles in bacterial biology was addressed by Professor Meta Kuehn, and their role at the intersection of chemistry, biology and engineering was discussed by Professor Hang Hubert Yin. In regards to cancer, Professor Matt Trau addressed the use of extracellular vesicles for the development of nanobiotechnologies for cancer diagnostics, while Dr Hector Peinado discussed the function of extracellular vesicles in cancer metastasis. There was also up to 28 parallel oral presentation sessions and 3 poster sessions, with many session themes offering further exposure to high-quality international research associated with the understanding of extracellular vesicle function in cancer biology, and their application as biomarkers, therapeutics and for technological innovation.

Several presentations and posters were associated with my research interest; extracellular vesicles in glioblastoma biology. Two key presentations stood out to me, including a research study that investigated the use of gentle sonication methods to temporarily open the blood-brain-barrier and facilitate the release of extracellular vesicles into the blood for clinical diagnostics and monitoring. Another, was research into unique molecular fingerprints that are found in the blood of glioblastoma patients that can be detected with Raman Spectroscopy technologies. During the event, there was common interest regarding single-EV technologies and biomarker discoveries for the clinical detection of cancer and other diseases. I had the privilege of presenting my biomarker research for glioblastoma diagnostics and monitoring. Both my poster presentation, “changes to small and large urinary extracellular vesicles in glioblastoma” and oral presentation, “machine learning models detect blood ‘fingerprints’ for accurate glioblastoma tumour surveillance”, were well-received, and facilitated valuable networking opportunities and potential collaborations. Notably, prospective national and international collaborations will be followed up with researchers from Sydney and in the Emirates, who are working on brain and other cancer types. Moreover, the conference also provided me with a platform to explore cutting-edge technologies for extracellular vesicle isolation and clinical diagnostics of brain cancers, with a total of 32 vendors showcasing their technologies. Of particular interest to me, was a prototype robotic technology by IZON Pty Ltd, that has been specifically developed for the clinical application of extracellular vesicles. It can process 100+ clinical samples per day, which will be highly useful as our biomarker research study for glioblastoma continues to be validated and translated to the clinic.

Overall, the ISEV2024 conference not only broadened my scientific knowledge but also fostered meaningful connections and inspired future research endeavours. In addition to attending ISEV2024, I had the opportunity to explore the Melbourne CBD, walk along the Yarra River, and enjoy great food. During this trip, I was also able to catch up with a friend and meet her newborn baby, adding a personal touch to an already memorable experience.

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