

Innovative funding by Australian entrepreneur signals shift in direction for brain cancer research

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The potential trigger events and environmental causes of a highly aggressive brain cancer will be researched in a one-of-a-kind study at Macquarie University, NSW, by non-profit [PANDIS](#), funded by entrepreneur Alan Noble.

Mr Noble has also established the Susie Myers Scholarship for Glioblastoma Multiforme (GBM) in memory of his beloved wife Susie, who lost her battle to the cancer just 11 months after diagnosis.

The fast-moving cancer displays nonspecific symptoms such as headaches, personality changes, nausea, and stroke-like symptoms. It is treated with various therapies but has no cure. .

“Susie was perfectly well one day and experienced a sudden, rapid decline the next, leaving me to wonder if perhaps something in our environment entered her body and triggered disease,” Mr Noble says.

“GBM is the most aggressive type of brain cancer; people may die within weeks or months of diagnosis, yet medical researchers have struggled to understand its causes for over three decades.

“The new research is made possible by technological advances, and the researchers believe, as I do, that it is imperative to investigate environmental disruptors as part of GBM research priorities.”

The project will investigate causation and correlation in GBM using an innovative protocol design and screening technologies, aiming to identify pathobiome signatures of GBM tumours.

“With this research we can accurately advance our understanding of GBM by ruling pathogens in or out,” Mr Noble said. “If we find pathogenic microbes in GBM tumours and can link them back to disease causation or correlation, we will be able to match effective treatments and increase patient survival rates. If GBM is an environmental disease, findings may eventually make it a preventable disease.”

Cancer researcher Dr Benjamin Heng is the lead scientist of the research project. He will be supervising the PhD student and leading the research project as recipient of the Susie Myers Scholarship for Glioblastoma Multiforme.

“The brain/biome axis is complex, and GBM tumours may host an ecosystem of microbes that until now have evaded detection because of technological limitations,” says Dr Heng.

“GBM research is often siloed into mono research projects such as investigating Cytomegalovirus (CMV), a virus that causes cells to coalesce to form large cells. While CMV is detected in GBM tumours, because it is asymptotically carried between 50-80 percent of the population without

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incident, something else is happening in the patient for a GBM to develop.

“Our research project scans all known pathogenic agents from a potential pool of 3,000 or more microbes to produce pathobiome data reports that will become statistically meaningful as more tumours are screened.”

Hallmarks of GBM include inflammation, immune dysregulation and isocitrate dehydrogenase (IDH), indicating a trigger event may well be environmental.

“In the past we have been looking in all the right places using an approach with limited capability,” says Dr Heng. “The technology we use today is incredibly powerful and most importantly, we are marrying this approach with other advanced technologies in the study of protein and immune system regulation to better understand the potential role of microorganisms in GBM pathology.

“We can now screen a GBM tumour for RNA/DNA fragments across microbial species and overlay complex data to identify and discover even the smallest of microbes that previously evaded detection. Our protocol design is the only one of its kind in the world. Not even three years ago could we attempt such findings.”

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About PANDIS

PANDIS is an environmental pathogenic diseases health and medical research not for profit investigating the whole of patient for causation and correlation in chronic disease including cancer, neuro-degenerative and mental health. Co-founded by neuroscientist and microbiologist Prof Gilles Guillemin, it houses a personalised medicine model, master protocol design and biobank and conducts pathogenic microbial research in chronic disease. GBM is a priority focus area for PANDIS as part of a promise made amongst researchers, patients, advocates, executives and collaborators to collaborate and unify global efforts to significantly improve survival rates for GBM patients by 2023. <https://pandis.org/>

About Alan Noble

Alan is an Australian engineer, technology entrepreneur and founder of the not-for-profit marine conservation organisation, AusOcean. In 2020 he lost his wife Susie Myers to GBM. In 2021 he established the Susie Myers Scholarship for Glioblastoma Multiforme (GBM) to fund this GBM pathogenic research project led by Dr Benjamin Heng. Mr Noble is also writing a book about their extraordinary life together which is told in two voices, Susie's and Alan's.

About Dr Benjamin Heng

Benjamin completed his PhD from UNSW with the focus on the role of virus in human breast cancer. His work has identified various viruses involved in human breast cancer and led to publications in highly regarded cancer journals. In 2012, he joined Prof. Guillemin's research group to work on biomarker discovery in human cancers. In 2019 he joined the PANDIS Scientific Working Group.

His research interests have since broadened to include other human cancers - brain, breast, liver and colorectal. ##