PROJECT DETAILS

Project Title:

Using Artificial Intelligence to identify Autoantibodies as Biomarkers of Response to Immunotherapy and Immune- related Adverse Events in Cutaneous Melanoma Patients

Project Summary: aims, significance, expected outcomes and potential research impact.

Current clinical management practices for late-stage melanoma are a powerful example of the positive impact of precision medicine on patient outcomes, including improved survival due to the use of immunotherapy. However, only 20-60% of patients respond to single - or combination immunotherapy, respectively, for more than 12 months and the frequent occurrence of often severe immune-related adverse events (irAEs) suggests the need for greater patient surveillance.This study will utilise, for the first time, artificial intelligence (AI) analysis on a large dataset of >21000 antibodies and 100 microarray images to discover signatures of autoantibodies (AAbs) as blood-based biomarkers to predict the response to immunotherapy and the onset of irAEs in already collected samples of >100 late-stage melanoma patients.

Preferred applicant skill set, describe the capabilities of the HDR applicant:

We are looking for a self-motivated PhD candidate with excellent communication, problem-solving and project management skills who enjoys working in a team environment and making contact with clinicians and potentially patients/consumers. Candidates with a data scientist background or similar who can show strong quantitative skills in artificial intelligence approaches and computer programming are required. We are looking for a candidate who is passionate about cancer research, caring for patients and who is willing to learn skills in biomedical science labs in addition to data analysis to widen their skill set and work across the biomedical science and data analysis disciplines.

Contact person for the project:

Name:	Dr Pauline Zaenker	Contact number:	+618 6304 2783
Email:	p.zaenker@ecu.edu.au (preferred method of contact)		