



Project Title: How can we improve chemotherapies to cure cancer?		Code: CCS12
Host School / Institute: Central Clinical School/ Charles Perkins Centre		Address: Level 5 (East) The Charles Perkins Centre (D17)
Certificates & Clearances required: No		
Primary Supervisor: A/Prof Carl Feng		
Phone: 02 9351 6177	Email: carl.feng@sydney.edu.au	
Co-Supervisor/team: The Host Defence and Immunology laboratory is located at The Charles Perkins Centre. It currently has 5 PhD students working on various immunology related research projects. The trainee student will be supervised by A/Prof Feng and a senior PhD student, who has developed the project described in this proposal.		
Project Type: Laboratory based; Qualitative Analysis		
Project Category: Cancer; Immunology & Infection		
Skills / Attributes of a successful student: Passionate about science, curiosity, driven, work ethic and a strong interest to pursue a PhD training and career in medical research.		
Project Keywords: cell death; cancer; cancer drug; inflammasome; Imaging flow cytometry		
<p>Project Description: Cells die in a natural process to recycle molecules and to be replaced with healthy cells that function optimally. Cancer happens when cells refuse to die in their natural process, and instead multiply at a rapid rate, stealing resources from the body and causing damage to other tissues. In Australia, melanoma is the third most prevalent cancer, with 1 in 17 people in NSW diagnosed with melanoma by the time they reach the age of 85. However, many cancers are resistant to chemotherapies. Sometimes drugs used to treat melanoma kill cells in ways that we do not understand. It is critical for physicians to understand if cancer drugs are working and how they are working, in order to protect patients from debilitating side-effects and unsuccessful treatments. The Host Defence and Immunology laboratory has developed a breakthrough method to test if a cancer drug can kill the cancer and how the cancer is dying. This novel technique is at the forefront of science and will offer a bright student an opportunity to solve a real-world problem of cancer therapy.</p> <p>The successful applicant would be trained to use this cutting-edge technique and would work to identify cancer drugs that are safe and effective for killing melanomas, thereby contributing to improving melanoma patient survival rates. There is an opportunity for the applicant's work to be published in an international scientific journal. Preference will be given to an applicant who intend to take an honours year in the Host Defence and Immunology laboratory in 2020.</p>		