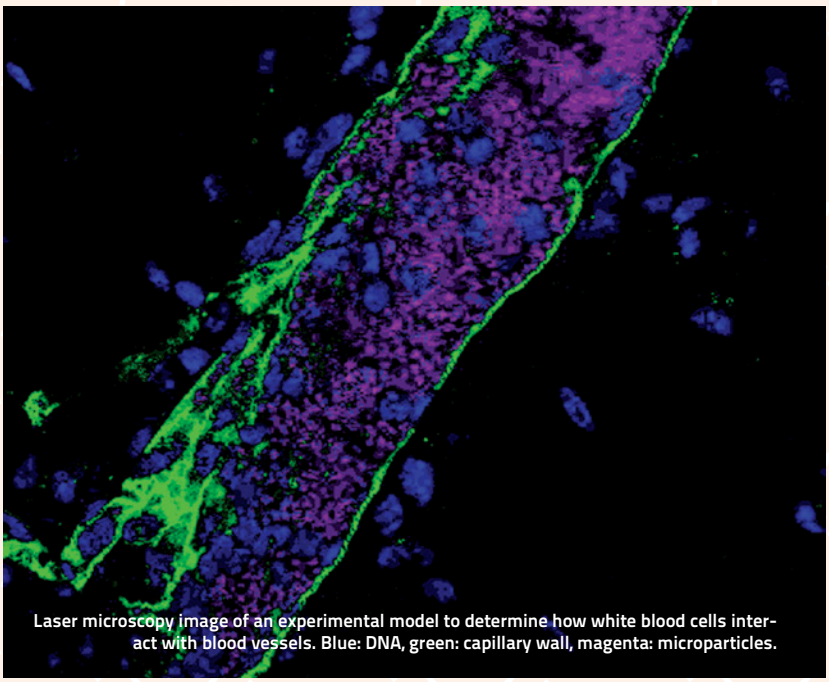
ALUMNI talk

Life after University: four stories from four graduates.

Stopping inflammation

DR JESMOND DALLI talks about his journey from Malta to Harvard



Laser microscopy image of an experimental model to determine how white blood cells interact with blood vessels. Blue: DNA, green: capillary wall, magenta: microparticles.

MY RESEARCH STARTED in a completely different discipline: rays and sharks. I studied these animals during a Bachelor of Science in Chemistry and Biology, and a Masters of Science in Biology at the University of Malta. I saw how these fish lived, where they were found, how they developed and the affect of local human pressures on their survival. The data was needed to help get to know these species and figure out how best to protect them from fishing impacts. An important achievement was finding the Portuguese dogfish (Centroscymnus coelolepis) — a first in Maltese waters.

When I continued my studies abroad, I changed my specialty to immunopharmacology. For my Ph.D., (Queen Mary University of London), I worked in the laboratory of Prof. Mauro Perretti exploring the therapeutic potential of a protein called Annexin A1. We made small proteins based on the structure of Annexin A1 that reduce inflammation and helped return the tissue to its pre-inflammatory state. Inflammation is usually a normal bodily response, but over a long time it can cause disease ranging from heart disease and obesity to arthritis and cancer.

My research focused on treating rheumatic disease like arthritis. The findings were promising, so we applied for a patent on these small proteins, which might help treat disease. Although it will take years, it would be really satisfying to see this research actually curing people.

At the same time, I studied certain immune cells called neutrophils that regulate inflammation. These cells release microparticles that control swelling and prevent bodily harm. I helped pinpoint how the particles work and because of these findings, in 2010, I won the William Harvey Young Investigator Award.

After my Ph.D., I moved to America to continue researching inflammation through a post-doctoral fellowship in Dr Charles Serhan's laboratory at Harvard Medical School. This lab has discovered a specific family of fatty acids, which are enriched in fish oils, that protect tissue by controlling inflammation, pain and promote tissue regeneration. We are now identifying new members of this family and working out exactly how they work. ●

Ed: *I first met Jesmond during my undergraduate studies at University when he introduced me to numerous fishermen at the* pixkerija. *We met on the docks of Marsa at 2 a.m. to the smell of dead fish and the sea — an unforgettable experience and my first research project.*