

2020 Winter Research Project Descriptions

Project title:	Surviving the unsurvivable
Project duration:	5 weeks
Description:	<p>Quiescence, a metabolically suppressed state that is used by all organisms to increase the chance of surviving potentially lethal stress until conditions improve. Some common examples are desert frogs that survive for years between rain events, seeds that likewise survive for many years in the absence of water as well as kangaroo embryos that stop growing during drought and starvation. At the cellular level, cancer cells can evade chemotherapy by entering a quiescent state from which they can emerge later, resulting in progression of the disease. Another quite distinct example is that of stem cells, which are maintained in pristine condition in a quiescent state from which they can be reactivated to repair damage and rejuvenate tissues.</p> <p>This project will explore genes and conditions that control entry into and exit from the quiescent state. This research area is of medical, agricultural and ecological significance.</p>
Primary Supervisor:	A/Prof Paul Ebert Ph: 3365 2973 p.ebert@uq.edu.au

Project title:	Effect of rainfall on wildflower germination across shaded and open microclimates in Western Australian
Project duration:	4 weeks
Description:	<p>This research will examine the influence of rainfall amounts on the germination of annual plants within a semi-arid woodland ecosystem. Rain-out shelters will be used to simulate drought and will be established across shaded and open microclimates to explore how variation in space affects plant germination. Understanding how diversity is influenced by water availability and spatial heterogeneity will improve our predictions of the impact of increasing drought and rainfall variability on diverse plant communities.</p> <p>The student will accompany members of the lab to our field site in the Eucalypt Woodlands of the Western Australian Wheatbelt to undertake field work monitoring the germination of annual wildflowers.</p>
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