PSYCHOLOGY

Academic Researcher:	Professor Louise Sharpe
Project Title:	**To focus on pain or not to focus: WHEN is the question**
Project Summary:	Anyone who has ever walked through a spider web knows that heightened attention can amplify bodily sensations. Suddenly, every tiny sensation feels like a giant spider is crawling across you. In much the same way, current psychological theories of pain perception propose that heightened attention to pain amplifies its perception. This has led to a wealth of psychological research to identify and modify attentional biases towards pain-related stimuli. While attentional bias accounts have significantly enhanced our understanding of pain perception, measurements and modification of attentional bias do not consistently predict pain in the laboratory. Further, large-scale studies attempting to modify attentional biases in people with chronic pain have failed to attenuate pain, suggesting that translation of the existing accounts is premature. In order to reconcile a well-established axiom of pain – i.e. that attention enhances pain perception – with the inconsistent empirical findings, we propose a new theory in which attentional alignment rather than attentional bias per se determines the extent to which attention heightens pain perception. The current project uses novel experimental paradigms in virtual reality to challenge the prevailing theories on attentional biases and pain perception, by systematically testing a new theoretical model in which attentional alignment to the context is the critical psychological factor driving pain perception.
Project Synopsis:	In addition to the central role of context (i.e. adaptive vs maladaptive environments) on the relationship between attention and pain, there is a critical need to develop new methods to assess attentional biases in pain. Attentional biases are typically assessed using pain-related stimuli, such as facial expressions of pain or pain-related words, which themselves can be ambiguous (e.g. boring, sharp), rendering their conceptual relevance and ecological validity dubious. Therefore, in the current project, we will exploit cutting-edge methods in virtual reality (VR) environments to increase immersion and embodiment of pain and thereby provide conceptually clear and ecologically valid assessments of attention to pain (i.e. nociceptive stimuli). The ARC project has three aims, although it is envisaged that the PhD student would likely focus on one of these: Aim 1: Does attentional bias or attentional misalignment amplify pain perception? Aim 2: Do threat, fear of pain, or pain expectancy influence attentional bias and attentional alignment? Aim 3: Harnessing experimental paradigms to modify pain.
Additional Information:	This project also has international collaborators at Ghent University in Belgium and Maastricht University in The Netherlands. We would envisage that the student would travel to these collaborating institutions at least once during the PhD (COVID-permitting).

Academic Researcher:	Associate Professor Ben Colagiuri
Project Title:	**Clinical and community applications of placebo and nocebo effects**
Project Summary:	Over the last two decades, a wealth of experimental studies has helped us to uncover the psychological mechanisms of placebo and nocebo effects. But a critical remaining question is how placebo and nocebo effects apply to clinical and community settings. This project focuses on translating basic knowledge of placebo and nocebo effects to clinical and/or community settings.
Project Synopsis:	Placebo and nocebo effects are fascinating psychobiological phenomena whereby individuals experience beneficial (placebo) or adverse (nocebo) outcomes simply as a result of the act of receiving a treatment. Experimental studies have shown reliable placebo effects and nocebo effects across many conditions, including health (e.g. pain, nausea, sleep, mood, immune function, Parkinson's disease), cognitive function (e.g. attention, learning, memory), and sports performance (e.g. running, cycling, weightlifting). Advances in neuroscience have demonstrated that expectancies generated by verbal, social, and contextual cues trigger activation of the central nervous system in order to produce these placebo and nocebo effects. However, we know comparatively less about the clinical and community applications of placebo effects. For example, does tailoring treatment delivery to maximise placebo effects and minimise nocebo effects improve patient outcomes? Can this be achieved without deception? Do nocebo effects contribute to community illnesses like electromagnetic hypersensitivity and wind turbine syndrome? How can we prevent this? The current project seeks to advance knowledge of the clinical and/or community applications of placebo and nocebo effects. The successful candidate will be able to shape the specific direction of the project and whether the focus is on clinical or community applications. Examples of clinical applications include clinical trials testing interventions aimed at enhancing placebo effects and minimising nocebo effects, such as open label placebos, framing and communication techniques, or learning techniques, in pain, nausea, sleep or other conditions. Examples of community applications include surveillance and intervention studies aimed at understanding the contribution of and preventing any nocebo effects for community illnesses like electromagnetic hypersensitivity and wind turbine syndrome.
Additional Information:	The successful candidate will have a background in Psychology or closely related field, ideally with some prior knowledge of the placebo effect, clinical trials, and or community interventions, although this is not necessary. The successful candidate will join a well-resourced lab of approximately 10 researchers, including postdocs, PhD and honours students, and research assistants focused on placebo and nocebo effects. There will be opportunities to collaborate with both leading local and international

	researchers with expertise on placebo and nocebo effects as well as related fields (e.g. health psychology, medical psychology, learning).