

PSYC360

Research internship in Psychology

Spring 2022

Wollongong

Flexible

Credit Points: 6

Pre-requisites: PSYC231 and PSYC234 and PSYC236 and PSYC241 and PSYC250

Co-requisites: None

Restrictions: Selected students will be enrolled manually by the Coordinator

Contact Hours: N/A

Coordinator: Professor Robert Barry (rbarry@uow.edu.au)

Subject Description

This internship subject will provide outstanding students who have an interest in research with the opportunity to learn how research is done by working alongside researchers in an active research group. Emphasis will be on learning practical skills in the selected area, working as part of a team, achieving research objectives in laboratory or field work, accurately recording methods and results, and critically evaluating the research methods of others. Students will participate in ongoing research activities under the supervision of a staff member of the School of Psychology. This may occur on campus in a laboratory context or off-site at an appropriate research location. 150 hours participation in lab work or other approved activities is required.

This subject is graded Satisfactory/Unsatisfactory based on scheduled student journal submissions and an end-of-project report.

PSYC360 projects for Spring 2022

There are 10 projects currently on offer, although some projects can take more than 1 student. Please read them carefully and email the coordinator by 5 June with a list of up to 4 projects, in order of preference, that you would be interested in undertaking for the subject.

Project 1	Investigating the perception of hooks in popular music using continuous self-report data
Supervisors	Tim Byron
Description	This project is focused on understanding the way that audiences process the ‘hooks’ which are commonly heard in popular music – the phrases in the music that stand out and are easily remembered. We will be looking at re-analysing previous data which had participants use continuous self-report methodology, to identify which of the hooks identified by musicologists in previous research are most correlated with audience response across several different songs. Additionally, we will be preparing stimuli for future research in this area, exploring the use of algorithmic tools that can portion out different parts of a song to better understand the role of particular hooks in audience perception.

Project 2	Understanding chronic and severe mental health challenges - Project Air Strategy for Personality Disorders
Supervisors	Brin Grenyer
Description	<p>This internship involves working alongside a busy lab of active researchers in applied psychological research studies. Personality disorder is a complex mental health challenge and involves a disorder of personality (sense of self identity), interpersonal relations (difficulty understanding the perspective of others accurately) and self-control (impulsivity, self-harm, suicidal ideation and aggression). Project Air conducts applied scientific studies of patients with personality disorders in treatment to both advance basic science and applied therapies.</p> <p>www.projectairstrategy.org</p>

Project 3	Child mental health and wellbeing in the transition to school
Supervisors	Stuart Johnstone
Description	<p>Our lab is currently looking at factors that affect the transition from pre-school to primary school. We are conducting a systematic review in this area, as well as running a study in pre-schools during 2022, and will be subsequently following these children into primary school (in 2023). We will be considering a range of factors including social, environmental, cognitive, demographic, and EEG. As well as involvement in the research process, there are many interesting questions that could be examined by two PSYC360 students using the 2022 cross-sectional data, with specific questions to be developed with the students.</p>

Project 4	Interference and forgetting in verbal short-term memory
Supervisors	Steven Roodenrys
Description	<p>We have recently demonstrated that interference between words in short-term memory does not occur in the way some theories have assumed, which is that new items entering memory overwrite items already in memory. Instead we showed that saying the first words in recall interferes with the items that are still in memory. We did this by carefully controlling the overlap in the sounds in the words in the lists used to test short-term memory. There are many ways in which we can further investigate how this process happens and how much it contributes to limiting the capacity of short-term memory. The project will involve creating sets of stimuli and conducting an experiment in the lab in which participants are presented with lists of 6 or 7 words to recall in correct order, and the detailed scoring of their responses.</p>

Project 5	Caffeine effects on resting HR measures
Supervisors	Robert Barry, Frances De Blasio, Adele Cave
Description	<p>Barry, Rushby, Wallace, Clarke, Johnstone, and Zlojutro (2005) reported caffeine effects on eyes-closed resting-state psychophysiological measures from a randomised double-blind placebo-controlled repeated-measures cross-over study in university students. Mean cardiovascular measures across a 2 min period some 30 min post-ingestion (the approximate time of maximum caffeine impact) failed to show significant caffeine/placebo differences, although significant electrodermal and EEG results supported caffeine's expected increase-in-arousal effect.</p> <p>The present study will re-examine these cardiac data with the addition of heart rate variability (HRV) measures, and include un-reported data from alternating 2 min eyes-open epochs bracketing the previously-used eyes-closed 2 min epoch.</p>

Project 6	Exploring mind wandering with fNIRS
Supervisors	Robert Barry, Frances De Blasio, Adele Cave
Description	<p>Functional near-infra-red spectroscopy (fNIRS) can estimate the oxygenated status of haemoglobin in the near-underlying cortical vasculature below an emitter-receiver device placed on the scalp, and do so in real time. This exploratory pilot study will examine the stability of such measures from the frontal hemispheres in a mind-wandering task (as used in van Son, De Blasio, Fogarty, Angelidis, Barry, and Putnam, 2019).</p> <p>You will record your own data in this task using a 20-min breath-counting session, and evaluate the mean fNIRS profile over mind-wandering episodes in that session. You will repeat this weekly for up to 10 weeks.</p> <p>This project aims to assess how stable is the mean fNIRS profile from each mind-wandering session, and if the frontal fNIRS response is lateralised.</p>

Project 7	"It could have been worse": Relationship of downward counterfactual thinking with feelings of luck and gratitude
Supervisors	Amy Chan
Description	We are living in neither the best nor the worst possible world. How may people's circumstances and vantage points (i.e., perspectives) be related to their subject experience and narratives about "silver linings" when living through challenging times (e.g., the COVID pandemic)? How may thoughts about how things could have been worse (downward counterfactual thinking) be associated with feelings such as of luck and gratitude? In this project, you will be guided to gain experience in conducting an online study via Qualtrics to explore this issue.

Project 8	Monocular stereopsis and the hollow face illusion
Supervisors	Harrold Hill
Description	<p>Stereopsis is normally associated with binocular vision and stereograms. However a similarly compelling impression of three-dimensional (3D) solidity can be experienced monocularly, for example with a random dot kinematogram. The hollow face illusion also gives this vivid impression of 3D solidity when viewed monocularly and this project aims to investigate why this is. Parallel screen and 3D object based experiments will investigate what viewing conditions lead to more compelling impressions of 3D shape through forced choice judgments. Results will be interpreted with respect to cue conflict and absolute depth scaling based theories of monocular stereopsis and may have practical implications for 3D displays and face perception.</p> <p><u>Reference:</u> Vishwanath, D. (2014). Toward a new theory of stereopsis. <i>Psychological Review</i>, 121(2), 151–178.</p>

Project 9	Neuroimaging: Functional organisation and connectivity in early visual cortex
Supervisors	Mark Schira
Description	<p>This project is the ideal opportunity to learn concepts and tools of cutting edge neuroimaging techniques. Human visual cortex is composed of several large cortical areas, each containing a retinotopic map of the environment. These maps are routinely revealed using function magnetic resonance imaging (fMRI) and dedicated visual stimuli which is called retinotopic mapping (Schira et al. 2009, https://doi.org/10.1523/JNEUROSCI.1760-09.2009). While fMRI measures neuronal activity in grey matter, diffusion MRI (dMRI) measures white matter connectivity and is routinely acquired.</p> <p>This project will use the Human Connectome 7T dataset (Benson et al 2018, https://doi.org/10.1167/18.13.23) combining retinotopic mapping (fMRI) and dMRI, to investigate the functional connectivity in human visual cortex.</p>

Project 10	Presenteeism (working while ill) as adaptive behaviour
Supervisors	Peter Caputi
Description	<p>Presenteeism (working while ill) is associated with health and financial costs. Recently, Karanika-Murray and Biron (2020) have argued that presenteeism can also be seen as purposeful and adaptive. It can be a choice that strives to balance health concerns and job performance. This project explores how presenteeism as an adaptive process is influenced by workplace factors as well as individual psychological variables.</p> <p>Karanika-Murray, M & Biron C. (2020). The health-performance framework of presenteeism: Towards understanding an adaptive behaviour. <i>Human Relations</i>, 73(2), 242-261.</p>