**2020 Summer Winter Research Project Description**

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| **Project title:** | **The contribution of natural image statistics to object perception** |
| **Positions available:** | **1** |
| **Project duration and delivery** | 10 weeks |
| **Description:** | Much of human visual neuroscience is concerned with how we see visual objects that are easily identified by simple geometric patterns. A person crossing a street, a coffee mug, and a dog can all be identified by their borders or silhouettes. However, these “things” form only a portion of our visual world. A patch of grass, wooden floorboards, and bubble-wrap are all as easily identifiable, but not from their simple borders or silhouettes. Instead, this “stuff” is identifiable only by higher-order information that the visual system interprets as a material, or texture. In general, stuff (i.e. a visual material) consists of repeating patterns, but the same is not true for things (i.e. visual objects). This year's project involves understanding how stuff and things interact when we look at the world. In particular, we will test how well people can combine information about different types of textures to detect changes to visual scenes and objects. |
| **Expected outcomes and deliverables:** | The student will be trained in psychophysical methods, and depending on the progress of the project, the implementation of general linear models in MATLAB and/or the R programming language for data analysis. The student will give a presentation of the project to the lab group. |
| **Suitable for:** | This project is suitable for students with a background in undergraduate Psychology courses at UQ, particularly those at the end of their second or third year. |
| **Primary Supervisor:** | Dr William Harrison and Dr Reuben Rideaux |
| **Further info:** | Research will be conducted at the Queensland Brain Institute, pending appropriate induction and training to access facilities.  Please contact Will Harrison prior to applying: w.harrison@uq.edu.au |