2027 Summer Research Project

Section	Description
Project title	Eyes in the Sky: How Radio Communication Shapes Pilots' Visual Attention
Hours & delivery	The project will commence on 12 January and run for approximately six weeks. Students will complete 24 hours of work per week, (2 days on campus,1-day WFH) with some flexibility in how these hours are scheduled. On-campus work will occur in the eye-tracking laboratory in the McElwain Building. The remaining one-third of the weekly hours may be completed remotely on another day chosen by the student. Students will also attend weekly project meetings.
About the project	Pilots must monitor complex visual information while simultaneously listening and responding to radio communications. This project examines whether different types of communication, including reading information from instruments, recalling information from memory, and performing calculations, interfere with pilots' visual attention and flight performance. Using a simulated aviation task and eye tracking, we will investigate when communication demands become sufficiently taxing to disrupt monitoring of aircraft, traffic, and instruments. Understanding these attentional costs may help identify communication demands that increase the risk of missing safety-critical information. The student will contribute to preparing the experiment, collecting participant data, processing eye-tracking recordings, and conducting preliminary analyses.
What you'll do	• Schedule participants through the SONA system. • Supervise participants completing the simulated aviation experiment. • Learn to operate and calibrate a high-precision eye tracker. • Conduct a focused literature review on aviation communication, divided attention, workload, and visual attention. • Attend weekly meetings to discuss progress, research methods, and emerging results.
What you'll learn	Students will gain practical experience conducting laboratory-based research with human participants and managing experimental data collection. They will learn to operate and calibrate a high-precision eye tracker and assess the quality of eye-tracking data. Students will also develop skills in reviewing scientific literature, processing behavioural and eye-tracking data, and conducting preliminary statistical analyses. More broadly, the project will strengthen their understanding of experimental psychology, human attention, and applied research in aviation safety.
Project outcomes	By the end of the project, students will have gained practical experience conducting a laboratory experiment and independently operating a high-precision eye tracker. They will also have developed skills in literature reviewing, behavioural and eye-tracking data processing, and preliminary statistical analysis.
Who should apply?	This project would suit a third- or fourth-year student with an interest in experimental or cognitive psychology, human factors, or aviation. The ideal student will be confident interacting professionally with participants, comfortable using computers, willing to learn new research methods and equipment, and able to commit reliably to the required on-campus hours. Attention to detail, organisation, and an interest in working with behavioural and eye-tracking data would also be valuable.
Team & supervision	The project will be overseen by Associate Professor Stefanie Becker and supervised by current PhD candidate Chrissy M. Ling, who will work directly with the student throughout the project. The student will be based in the Becker Lab and will also have opportunities to attend broader lab meetings, where members present and discuss their current research and findings.

Additional opportunities	Students will have the opportunity to present project findings at Becker Lab meetings, although this is not required. They may also attend relevant research events, such as the Brisbane Experimental Psychology Student Initiative (BEPSI) conference, providing opportunities to learn about current research, meet other psychology students and researchers, and explore pathways into further study.
Contact	Yes, students may contact the supervisor before applying. Direct enquiries to: Chrissy M. Ling: uqcling2@uq.edu.au