

2022 Global Change Youth Research Project Description

Please use this template to create a description of each research project, eligibility requirements and expected deliverables. Project details can then be uploaded to each faculty, school, institute, and centre webpage prior to the launch of the program.

Project title:	Alternative sources of critical minerals
Project duration, hours of engagement & delivery mode	<p>Duration of the project</p> <p>4 weeks during Winter Vacation and 1 day a week during semester 2, 2022.</p> <p>Hours of engagement must be between 20-36hrs per week</p> <p>COVID-19 considerations: <i>applicant will be required on-site for the project. In both SEES (UQ) and CSIRO (close to Pinjarra Hills).</i></p>
Description:	<p>The research project is focus on the geochemical identification of minerals that are potential hosts of elements that are critical for new energy systems. This requires the student to identify the minerals under scanning electron microscopy and perform geochemical analysis using laser ablation-inductively couple plasma-mass spectrometry (LA-ICP-MS) to evaluate the elemental composition and concentration of minor trace and rare earth elements on individual minerals.</p>
Expected outcomes and deliverables:	<p><i>The applicant will gain skills in data collection, learn different techniques, possible preparing a short communication for a conference or a newsletter. The student will also be asked to produce a report or oral presentation at the end of their project.</i></p>
Suitable for:	<p><i>This project is open to applications from 3rd – 4th year students only, with a background in Geology (particularly mineralogy, but not mandatory).</i></p>
Primary Supervisor:	<p>Dr Sandra Rodrigues (SEES-UQ) (co-supervisor: Priyanthi D. Hapugoda, CSIRO)</p>
Further info:	<p>The applicants can contact Dr Sandra Rodrigues by email (s.rodrigues@uq.edu.au) if they need further clarifications.</p>

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Project title:	Analysing the Potential Environmental Impacts of 2032 Brisbane Olympic Games
Project duration, hours of engagement & delivery mode	Duration of the project 4 weeks during Winter Vacation and 1 day a week during semester 2, 2022. Hours of engagement must be between 20-36hrs per week In case of COVID-19 limitations, the project can be done remotely considering that the work is computer-based modelling and analysis.
Description:	The research project involves identifying and analysing the potential environmental impacts (i.e., emissions, waste, and resource consumption) of the 2032 Brisbane Olympic Games by conducting a systematic review and environmental life cycle assessment. The preliminary outputs can be used as a basis for future grant proposal submissions on (re) designing and planning relevant facilities and infrastructure in order to make the staging of the games circular and sustainable.
Expected outcomes and deliverables:	Participating student will gain skills in data collection from databases and other sources with relevance to environmental life cycle assessment (i.e., inventory data, impact factors), analysing environmental impacts (e.g., greenhouse gas, waste), as well as conducting systematic review. The student is expected to produce a written report, which can be the basis for journal manuscript for submission to a reputable journal.
Suitable for:	This project is open to 3 rd /4 th year level students who have taken a course in sustainable consumption and production, or sustainable development or industrial ecology or green chemistry or circular economy, with preference to applicants who have learned the method of environmental life cycle thinking and assessment. Student should have interest in desktop research and computer-based modelling.
Primary Supervisor:	Dr Anthony Halog
Further info:	If you have further questions about the project, please directly email Dr. Anthony Halog at a.halog@uq.edu.au