

## UQ Summer 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.

<b>Project title:</b>	Magnesium based nanoparticles towards enhanced antibacterial efficacy
<b>Hours of engagement &amp; delivery mode</b>	The project would involve 30-36 h/ week of work for 6 weeks and would be onsite at research labs at School of Pharmacy.
<b>Description:</b>	<p>Antimicrobial resistance (AMR) is a growing global health crisis that threatens the effectiveness of antibiotics and other antimicrobial agents. The rise of resistant strains of bacteria is leading to an increase in treatment failures and healthcare costs. Addressing AMR requires innovative approaches to developing new antimicrobial agents and strategies.</p> <p>This project aims to explore the potential of magnesium-based nanoparticles as a novel approach to combat antimicrobial resistance. By leveraging the unique properties of magnesium oxide (MgO) nanoparticles, we seek to develop effective antimicrobial agents that can overcome resistance mechanisms and provide an alternative to traditional antibiotics. The project would involve synthesis of nanoparticles, their characterisation and antibacterial testing.</p>
<b>Expected learning outcomes and deliverables:</b>	<ul style="list-style-type: none"> <li>• Students will gain practical experience in synthesizing and characterizing nanoparticles using various techniques</li> <li>• They will acquire skills in designing and conducting antimicrobial assays, including disk diffusion, minimum inhibitory concentration (MIC) testing</li> <li>• The students will have the opportunity to contribute to research publications This experience will enhance their research credentials and communication skills.</li> <li>• Students will be asked to produce a report or oral presentation at the end of their project</li> </ul>
<b>Suitable for:</b>	This project is open to applications from students with a background in chemistry/ biology/biotechnology/pharmacy (preferably postgraduate or penultimate year students) with an enthusiasm for research, strong communication skills, and the ability to work collaboratively and independently.
<b>Primary Supervisor:</b>	Dr. Anjana Jayasree
<b>Further info:</b>	<p>Dr, Anjana Jayasree, Postdoctoral Research Fellow. School of Pharmacy a.jayasree@uq.edu.au</p> <p><b>**Please highlight if the supervisor wishes to be contacted by students prior to submitting an application: YES</b></p>