

## 2024 Summer Research Project

<b>Project title:</b>	<b>Metals in medicine: Developing radiopharmaceuticals for imaging and treating cancer</b>
<b>Project duration, hours of engagement &amp; delivery mode</b>	<p>Duration of the project, 6-10 weeks during Summer Vacation.</p> <p>Hours of engagement is between 20-36hrs per week.</p> <p>Applicant will be required on-site for the project</p>
<b>Description:</b>	<p>Metals play many important roles in medicine as metal-based materials, metallodrugs and agents for detecting and treating diseases. The biological applications can be influenced by the general properties and structure of the molecules or materials.</p> <p>We are a synthetic chemistry and radiochemistry group developing targeted radioactive agents called radiopharmaceuticals, for imaging and treating diseases such as cancer.</p> <p>This project will investigate the synthesis of new radioactive metal complexes, their attachment to peptide or antibodies and their potential to become metal-based radiopharmaceuticals.</p> <p>This project will involve synthetic chemistry and radiochemistry and the use of analytical techniques such as HPLC to characterise new molecules.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div data-bbox="470 1249 906 1574"> </div> <div data-bbox="938 1220 1356 1608"> </div> </div>
<b>Expected outcomes and deliverables:</b>	<p>The student will gain experience in synthesis and analytical chemistry techniques, where they will be synthesising and characterising newly designed molecules. The student will have the opportunity to learn radiochemistry techniques in a state-of-the-art radiochemistry facility using radionuclides to produce new radiopharmaceuticals.</p> <p>Students will be shown how to keep experimental notes and how to write a scientific report that may become part of a publication. Students will be given opportunities to produce an oral presentation to colleagues and engage in scientific discussions across a broad range of research areas.</p>

<b>Suitable for:</b>	This project will be suitable for students with an interest in multidisciplinary research that encompasses aspects of chemistry, radiochemistry, and biology. This project is open to 2 <sup>nd</sup> – 4 <sup>th</sup> year students with a background in chemistry/biomedical science/biology.
<b>Primary Supervisor:</b>	Associate Professor Brett Paterson
<b>Further info:</b>	Email: <a href="mailto:brett.paterson@uq.edu.au">brett.paterson@uq.edu.au</a> Applicants should contact Brett prior to submitting an application.