

## Professor Avril A. B. Robertson

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Date of Birth	13 March 1974	Address:	44 Marland Street
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### PROFESSIONAL PROFILE

Commercially focused PhD medicinal chemist with 7 years postdoctoral academic research at the University of Queensland and 10 years industrial experience. Key skills in driving medicinal chemistry projects including interpretation of associated data (SAR, ADME, PK). Experience in hit to lead and lead optimisation working in diverse target areas. Outstanding synthetic organic chemistry skills, developed over 23 years, including heterocyclic chemistry, peptide synthesis, library synthesis and development of synthetic routes for scale-up production teams. Expertise in project design, management of multidisciplinary teams, contract research and outsourcing. Proven skill set in teaching at secondary, tertiary and postgraduate levels. Prof. Robertson's research focus is in drug discovery particularly the areas of inflammation, cancer and pathogenic fungi. Her laboratory also has a key interest in generating tool compounds and probes for imaging, mode of action studies and delineation of biological pathways.

### ACADEMIC QUALIFICATIONS

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2016-2017	<b>Graduate Certificate in Higher Education</b> , University of Queensland, Australia.
2016-2017	<b>Australian Higher Education Leadership Certificate</b> , National Excellence in Education in Leadership Initiative, Australia.
2011	<b>Postgraduate Certificate in Secondary Education</b> , University of Dundee, UK. <ul style="list-style-type: none"><li>• 75% complete – moved to Australia</li></ul>
2003	<b>Masters degree course</b> Molecules in Medicine (S807), The Open University, UK.
1996-2000	<b>Ph. D. in Bio-organic Chemistry</b> , University of St Andrews, UK. <ul style="list-style-type: none"><li>• Ettie Steele Award for top student</li><li>• Study abroad with Professor Andrea Vasella, ETH, Zurich (1998) “<i>Synthesis of Anomeric Allenes as Novel <math>\beta</math>-Glucosidase Inhibitors</i>”</li><li>• 6 Publications from PhD</li></ul>
1992-1996	<b>Master in Chemistry Degree with Industrial Placement</b> University of St Andrews, UK. <ul style="list-style-type: none"><li>• Top student awarded all 5 prizes for chemistry &amp; practical laboratory excellence.</li><li>• Won 3 competitive bursaries.</li><li>• Industrial placement (6 mths) Novartis, Basel, Switzerland.</li><li>• Awarded Best Senior Honours Project “<i>Synthesis of inhibitors for Kynureninase</i>”.</li></ul>

### EMPLOYMENT

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2018-present	<b>Professor of Biotechnology and Biotechnology Program Director (full-time continuing appointment)</b> , School of Chemistry and Molecular Bioscience, University of Queensland. Main academic research is novel compounds to modulate inflammatory pathways. Particular interest in the innate immune system. Collaborations globally with >100 laboratories in this space and industry contacts. Designed, synthesised and patented ( <b>WO2017140778</b> ; <b>WO2016131098</b> ;) a vast number (>300) of NLRP3 inflammasome inhibitors. This was <i>commercialised in one of the largest biotech Series A investments (A\$22 million) for intellectual property from any Australian university.</i>
2018-present	<b>Affiliate of the Institute for Molecular Bioscience</b> , University of Queensland.
2017-2018	<b>Affiliate of the School of Chemistry and Molecular Bioscience</b> , University of Queensland.
2014-2015	<b>ResTeach Fellow</b> , School of Chemistry and Molecular Bioscience, University of Queensland.
2011-2018	<b>Senior Research Fellow</b> , Institute for Molecular Bioscience, University of Queensland.
2007-2009	<b>Project Leader and Senior Medicinal Chemist</b> , Cyclacel Ltd, Dundee, UK

*Project leader directing a multidisciplinary team of scientists, ensuring smooth running of the project. Set goals and timelines, created budget forecasts, coordinated outsourcing of synthetic and in vitro work, implemented screening cascades and made timely decisions on compound progression through the pipeline. Despite tight budget constraints the projects were very successful in delivering numerous highly active compounds and exceeded all expectations. Clear and regular communication with project team, management and scientific advisory board via meetings, presentations and reports. Responsible for ensuring clear intellectual property (IP) space for the chemical classes pursued through mining literature and databases. Wrote patents on particular compound classes - retained by the company. Liaised closely with Cyclacel's patent lawyers.*

2006-2007 **Senior Chemist**, Thermo Fisher Scientific, Maybridge Ltd, UK.

*Catalogue and custom synthesis developing safe, clean, robust methods for scale-up. Wide range of chemistry on 5 - 100 g scale, progressed to production/pilot plant. Custom synthesis for GlaxoSmithKline.*

1999-2006 **Senior Scientist/Project leader**, Tripos Discovery Research Ltd., UK

*Led and managed both internal and contract research projects for small and large pharmaceutical companies (Pfizer, Sanofi-Aventis, GSK) against a range of targets. Wrote proposals and executed chemistry collaborations with customers: file enrichment, lead generation and lead optimisation, large and small libraries (500 to 10,000 cpds / library). Maintained direct communication with customers from kick off meeting to final review. Managed the project teams, coordinated work underway (internal and sub-contract), concurrently conducting my own synthesis. Liaised closely across different departments, and company sites, from research validation to scale-up, production and quality control. Managed project budget ensuring timely deliverables in order to hit milestones, maximising profit and successfully completing within the project timeframe, securing repeat business.*

## SUPERVISION AND MENTORSHIP

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I have mentored and directly supervised people of all levels of education in my career to date. In industry I had line management responsibility for my teams of 6-20 staff which included junior staff to experienced postdoctoral workers. I set-up industrial placement schemes in liaison with UK Universities, interviewed undergraduate students supervised their placements and took care of their welfare during their "year in industry" these students remain in contact with me for mentorship and advice.

At The University of Queensland I have supervised multiple students undertaking research: 5 PhD students (2 as primary 3 as co-supervisor; 1 complete, 3 current, 1 commencing 2018); 7 Honours; 3 coursework project students; 10 summer/winter scholarship or volunteers; 7 summer internship students from Princeton University. I also supervised 1 postdoctoral worker at The University of Queensland and have one current research assistant. Under my guidance these students and staff have excelled in their studies gaining top grades and multiple awards of particular note my current PhD student is the recipient of an Australian-American Fulbright Postgraduate award. I continue to mentor those who have moved onwards to employment or fellowship positions. I have also studied good coaching practise through my study of **Higher Education Leadership in 2017**. I was awarded the **IMB impact award for Leadership in Dec 2017**.

## PRIZES/AWARDS/NOMINATIONS

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2017	Selected as representative of UQ's national SAGE Pilot of Athena SWAN program	12 outstanding UQ staff members who are influencing/ inspiring others, and creating change in their field
2017	Winner IMB Impact Award (Leadership)	
2017	Nominee IMB Impact Award (Innovation)	
2016	Nominated for IMB Impact Award (Leadership and Mentorship)	
2016	NEELI Scholarship	Competitive scholarship
2015	Nominee Teaching Excellence Award	Nominated by staff and students at UQ
2015	Nominee "Women in Science Award"	Nominated by colleagues at UQ

## PROFESSIONAL AFFILIATIONS/COMMITTEES

- **Member of:** National Professional Science Master's Association/Royal Society for Chemistry, UK/Royal Australian Chemical Institute/Australian Society for Microbiology
- **Committee Membership:** IMB Safety Committee/Teaching and Learning Committee, School of Chemistry and Molecular Biosciences, UQ/Organising Committee for the RACI Med. Chem. Division National Meeting Nov 2018/SAGE Athena SWAN Pilot Organisation and Culture Working Party University of Queensland/University of Queensland Protein Expression Facility Advisory Board

## CURRENT FUNDING

Year	Title	Funding body	Amount	Chief Investigators
2018-2020	Validating the NLRP3 Inflammasome as a Therapeutic Target in Motor Neuron Disease	NHMRC Project APP1145820	\$815,249	A/Prof Woodruff (CIA) A/Prof Atkin (CIB) Prof McCombe (CIC) Dr Walker (CID) <b>Prof Robertson (CIE)</b> Dr Gordon (CIF)
2017-2019	Novel NLRP3 Inhibitors for Asthma Therapy	NHMRC Development APP118973	\$959,500	<b>Prof Robertson (CIA)</b> Prof Hansbro (CIB) Prof Cooper (CIC)
2017-2019	Inflammatory pathways to liver fibrosis in nonalcoholic and alcoholic steatohepatitis: reversal by NLRP3	NHMRC Project APP1129208	\$574,000	Prof Farrell (CIA) A/Prof Schroder (CIB) Prof Cooper (CIC) Dr Teoh (CID) <b>Prof Robertson (CIE)</b>

## PATENTS

1. *Novel compounds and uses.* **PCT/IB2017/053059.**
2. *Sulfonylureas and related compounds and use of the same.* **WO2017140778.**
3. *Preparation of sulfonylureas and related compounds as inhibitors of NLRP3 inflammasome activation for the treatment of diseases.* **WO2016131098** (equivalents: BR112017017610, CA2975192, AU2016222278, IL253661, KR2017109678, CN107428696, EP3259253, JP2018510207, IN201717028526, PE01602018, SG11201706664Q, US20180044287).
4. Merck GMBH (2005). *Preparation of aroyl-O-piperidine derivatives as microsomal triglyceride transfer protein (MTP) and/or apolipoprotein B (ApoB) inhibitors useful in the treatment of dyslipidemia and related diseases.* **WO2005121091** (equivalents: FR2871463, AU2005251876, CA2569883, JP2007526232, EP2005742232, AU2005251876, AT438623, ES2330023, AR49438, US20070254919).
5. Merck GMBH (2004). *N-Benzodioxolyl, N-benzodioxanyl and N-benzodioxepinyl arylcarboxamide derivatives and pharmaceutical compositions comprising them.* **WO2004037806** (equivalents: AR049438, US20060058372, ZA200504235, FR2871463, CN1708491, BRPI0315620, MX2005004204, EP1554263, KR1020050060104, AR041720, CA2503452, AU2003276021).

## PUBLICATIONS

Currently 56 primary research publications/1837 citations. Significantly impacted by 10 years in an industrial environment. Post industry years, 2011 onwards, show clear upward trajectory accounting for 49/56 publications.

