

## QUALIFICATIONS

1993	PhD	Mathematics	University of Warwick, UK
1990	MSc	Mathematics	University of Warwick, UK
1988	BA (First Class)	Mathematics	University of Warwick, UK

## PROFESSIONAL DEVELOPMENT

2015	General Management Program	Harvard Business School
2014	Foundations of Directorship	Aust. Inst. of Company Directors

## EMPLOYMENT HISTORY

2015–	Professor	University of Sydney (USyd)
2007–2015	Academic (Levels D–E)	University of Wollongong (UOW)
1993–2007	Academic (Levels A–C)	University of Newcastle (UoN)

## LEADERSHIP POSITIONS HELD

2017–	Chair	Australian Council of Heads of Maths and Stats
2016–	Head	School of Mathematics and Statistics (SoMS), USyd
2017–	Chief Editor	Lecture Series, The Australian Mathematical Society (AustMS)
2014	Chair	Australian Research Council (ARC) Laureate Fellowship Selection Advisory Committee
2009–2013	Head	School of Mathematics and Applied Statistics (SMAS), UOW
2012	Dep. Chair	ARC Discovery Early Career Researcher Award Committee
2008–2009	Director	AMSI Summer School, held at UOW
2006	Director	Women@UoN Program, UoN
1995–2005	Chair	Committee for the BH Neumann Prize of the AustMS 7 times

## MEMBERSHIPS

2017	Member of three review panels: one Faculty, one School, one ARC CoE
2016	Royal Society of New Zealand, Member of Marsden Fund Mathematics and Information Sciences panel
2015	ARC Excellence for Research in Australia, Member of Mathematics, Information and Computing Sciences Research Evaluation Committee
2014	Member of the UOW Central Professorial Promotion Committee
2013–2015	Member of UOW Council elected by academic staff
2012–2014	ARC Australian Laureate Fellowships Selection Advisory Committee
2012	Australian Curriculum, Assessment and Reporting Authority (ACARA): Senior Secondary Mathematics Curriculum Advisory Panel
2011–2014	Australian Academy of Science: National Committee for the Mathematical Sciences
2011–	Editor of Lecture Series of Australian Mathematical Society (AustMS)
2010–2012	ARC College: Engineering, Mathematics and Informatics Panel
2009–	Australian Mathematical Sciences Institute (AMSI): Educational Advisory Committee
2009–2015	UOW Academic Senate
2009–2011	Council of the AustMS
2003–	Australian Mathematics Trust Primary Problems Committee
2002–2007	Board of the Hunter Valley Grammar School

## MEDIA EXPERIENCE

2016	Series of University of Sydney videos on ATAR
2016	Sydney Morning Herald video clip <i>Can you game the ATAR?</i> (>140k hits in 48 hrs)
2014	730 Report on <i>Crisis in Maths</i> , Friday January 24 2014
2011	Life Matters Radio National <i>Is maths a foreign language?</i> , 30 May 2011
1999 – 2005	ABC Radio Newcastle <i>Maths Talkback</i> with Paul Bevan and others

## AWARDS

---

- 2014 UOW Vice-Chancellor's Award for [Excellence in Research Culture](#)
- 2014 [Fellow](#) of the Australian Mathematical Society
- 2013 [BH Neumann Award](#) of the Australian Mathematics Trust
- 2006 Teaching and Learning Excellence Award, Faculty of Science and IT, UoN
- 1992 [BH Neumann Prize](#) of the Australian Mathematical Society

## EXECUTIVE SUMMARY

---

I have a significant profile in Leadership, Research, Teaching, and Service.

### **Leadership**

I lead by example; my performance makes me a credible leader of both research and teaching endeavours in complex environments. I have strong communication skills that enable me to effectively communicate a vision to both academic and professional staff at all levels.

In my first year as Head of SoMS at USyd we hired 10 academic staff, undertook major curriculum reform, improved research performance, and delivered a surplus above budget.

I was Head of SMAS at UOW from 2009 to 2013. During that time we: appointed 25 academic staff; increased our annual competitive income by 48%; increased our consultancy income by 560%; increased our ERA score in the 01 FOR code from 3 to 4; increased our undergraduate EFTSL by 24%; increased average entry scores of mathematics undergraduate students; supervised the third-largest cohort of research students in mathematical sciences in Australia; received two national teaching citations; and were part of a successful \$2M national project funded by the OLT. My leadership skills were reflected in the *Your Voice* survey; Engagement in the School increased from 85% in 2007 (the last survey prior to my appointment) to 91% in 2012 (the last survey during my tenure).

I was Deputy Chair of the ARC DECRA Selection Committee in 2012 and Chair of the Australian Laureate Fellowships Selection Advisory Committee in 2014.

### **Research**

Research is a central and critical component of my academic career. I have focused on research across mathematical boundaries, bringing insight and innovation to core areas of interest; for example, I used a combination of algebra, geometry and functional analysis to progress the Baum-Connes conjecture [11]. My mathematical activities have resulted in invitations to give plenary talks at international conferences and the awarding of over \$2M in external competitive research funding since 2002.

### **Teaching**

I enjoy teaching, take it very seriously, and received a teaching award from the University of Newcastle Faculty of Science and IT. In my latest Student Evaluation of Teaching, the average of the first eight questions was 5.8 out of a possible 6. I am on the Educational Advisory Committee for the Australian Mathematical Sciences Institute, and I served on the national ACARA Advisory Panel for the Australian Senior Secondary Mathematics Curriculum.

### **Service**

I believe that contributions to the immediate and broader community are of paramount importance to the success of individual academics, as well as the discipline and the institutions they serve. As a sample of my contributions, I have served on: the Australian Mathematics Trust Primary Problems Committee since 2003; the UOW Academic Senate 2009–2015; the ARC College of Experts 2010–2012; the Australian Academy of Sciences National Committee for the Mathematical Sciences 2011–2014; the ARC Australian Laureate Fellowships Selection Advisory Committee 2012–2014; the UOW Council 2013–2015; the UOW Central Professorial Promotion Committee 2014; and the ARC Excellence in Research Australia Mathematics, Information and Computing Sciences Research Evaluation Committee 2015.

## Research

### RESEARCH INTERESTS

---

I have broad interests across mathematics and its applications. I have published in group theory, functional analysis, operator algebras, and control theory. My current major projects are on: the general structure theory of totally disconnected, locally compact groups; the study of self-similar actions; and the classification of KMS states on  $C^*$ -algebras.

### AUSTRALIAN RESEARCH COUNCIL GRANTS

---

- 2017–2019 Ramagge, Brownlowe, Raeburn, and Laca, DP170101821, \$286,000  
*From actions to operator algebras and their equilibrium states*
- 2015–2017 Willis and Ramagge, DP150100060, \$443,000  
*Scale-Multiplicative Semigroups and Geometry*
- 2013–2015 Ramagge and Raeburn, DP130100490, \$390,000  
*States and structure of operator algebras from self-similar actions*
- 2010–2013 Ramagge, Raeburn, and Laca, DP1096001, \$420,000  
*Structure and states of operator-algebraic dynamical systems*
- 2009–2014 Willis and Ramagge, DP0984342, \$376,868  
*Totally disconnected groups in algebra and geometry*
- 2005–2007 Willis and Ramagge, DP0556017, \$234,000  
*Geometric representation of small-rank totally disconnected groups*
- 2003–2005 Raeburn, Ramagge, Laca, and Larsen, LX0348081, \$50,600  
*Hecke Algebras in Algebra and Analysis*
- 2002–2004 Willis and Ramagge, DP0208137, \$185,000  
*Totally disconnected groups and their algebras*

### OTHER SIGNIFICANT FUNDING

---

- 2008–2009 Australian Mathematical Sciences Institute:  
[AMSI Summer School](#) (Ramagge as Director), \$220,000
- 2007 VolkswagenStiftung: Willis *et al* (Ramagge 1 of 4), €44,000  
[Totally disconnected Groups, Graphs and Geometry](#)

### SELECTED INVITED PRESENTATIONS AND LIMITED-ATTENDANCE EVENTS

---

I have given talks in over 12 countries across four continents at notable institutions including: Oxford, Warwick, Dartmouth, La Universidad Autonoma de Madrid, and Neuchâtel.

- 2016 [Permutation Groups](#), Banff International Research Station
- 2012 [Baumfest](#), Australian National University
- 2012 [Combinatorics, representations, and structure of Lie type](#), University of Melbourne
- 2012 [Distinguished lecturer](#), University of South Australia
- 2010 Keynote speaker, [New Zealand Mathematics Colloquium](#)
- 2009 [Plenary speaker](#) at Australian Mathematical Society Annual Meeting
- 2007 [Totally disconnected groups, graphs and geometry](#)  
in Blaubeuren, Germany, fully funded by VolkswagenStiftung
- 2007 UK lecture tour funded by the London Mathematical Society
- 2007 [Buildings and combinatorial representation theory](#) at AIM
- 2006 [The property of rapid decay](#), American Institute of Mathematics (AIM)
- 2001 [Random walks and geometry](#), Erwin Schrödinger Institute, Vienna
- 2001 [Operator Algebras](#), New Zealand Mathematics Research Institute
- 1999 National Conference on Algebra, Beijing Normal University
- 1993,5 [Séminaire Claude Chevalley](#)

## PUBLICATIONS

---

In the following list, some authors are highlighted as follows:

- Student co-authors are marked with a <sup>s</sup>.
- Post-doctoral coauthors are marked with a <sup>p</sup>.
- Early-career or mid-career coauthors to whom I provided significant mentoring during the collaboration are indicated with a <sup>m</sup>.

Authors are listed alphabetically in all but [17]. Author contributions to each paper is equal with that of the other authors except for: [17] in which I did not significantly contribute to the engineering applications discussed; and [13] in which five of the authors were undergraduate students being guided through a research project.

The figure (a/b Qi) represents the SCImago 2015 exact and quartile journal rank.

### Scholarly book chapters:

- [24] A. Ram and J. Ramagge, Affine Hecke Algebras, cyclotomic Hecke algebras and Clifford theory, A tribute to C. S. Seshadri (Chennai, 2002), 428–466, **Trends Math.**, Birkhäuser, Basel, 2003.

### Refereed journal articles:

- [23] M. Laca, I. Raeburn, J. Ramagge, and M.F. Whittaker<sup>p</sup>, Equilibrium states on operator algebras associated to self-similar actions of groupoids on graphs, 48 pages, <https://arxiv.org/pdf/1610.00343.pdf>
- [22] N. Brownlowe<sup>m</sup>, D. Pask, J. Ramagge, D. Robertson<sup>p</sup>, and M.F. Whittaker<sup>p</sup>, Zappa-Szép product groupoids and  $C^*$ -blends, *Semigroup Forum* 94 (2017) 500–519. (23/78 Q2)
- [21] U. Baumgartner, J. Ramagge and G.A. Willis, Scale-multiplicative semigroups and geometry: automorphism groups of trees, **Groups Geom. Dyn.** 10 (2016) 1051–1075. (5/45 Q1)
- [20] M. Laca, I. Raeburn, J. Ramagge, and M.F. Whittaker<sup>p</sup>, Equilibrium states on the Cuntz-Pimsner algebras of self-similar actions, **J. Funct. Anal.** 266 (2014) 6619–6661. (8/118 Q1)
- [19] N. Brownlowe<sup>m</sup>, J. Ramagge, D. Robertson<sup>p</sup>, and M.F. Whittaker<sup>p</sup>, Zappa-Szép products of semigroups and their  $C^*$ -algebras, **J. Funct. Anal.** 266 (2014) 3937–3967. (8/118 Q1)
- [18] M. Laca, I. Raeburn and J. Ramagge, Phase transition on Exel crossed products associated to dilation matrices, **J. Funct. Anal.** 261 (2011) 3633–3664. (8/118 Q1)
- [17] J. Mare<sup>s</sup>, J. De Doná, M. Seron<sup>m</sup>, H. Haimovich<sup>m</sup> and J. Ramagge, When does QP yield the exact solution to constrained NMPC?, **Int. J. Control** 82 (2009) 812–821. (31/598 Q1)
- [16] U. Baumgartner<sup>m</sup>, M. Laca, J. Ramagge and G.A. Willis, Hecke algebras from groups acting on trees and HNN extensions, **J. Algebra** 321 (2009) 3065–3088. (14/78 Q1)
- [15] U. Baumgartner<sup>p</sup>, J. Ramagge and B. Rémy, Contraction groups in complete Kac-Moody groups, **Groups Geom. Dyn.** 2 (2008) 337–352. (5/45 Q1)

- [14] U. Baumgartner<sup>p</sup>, J. Ramagge and G.A. Willis, A compactly generated group, whose Hecke algebras admit no bounds on their representations, **Glasg. Math. J.** 48 (2006) 193–201. (118/373 Q2)
- [13] U. Baumgartner<sup>p</sup>, J. Foster<sup>s</sup>, J. Hicks<sup>s</sup>, H. Lindsay<sup>s</sup>, B. Maloney<sup>s</sup>, I. Raeburn, J. Ramagge and S. Richardson<sup>s</sup>, Hecke algebras of group extensions, **Comm. Alg.** 33 (2005) 4135–4147. (35/78 Q2)
- [12] J. Ramagge and W.W. Wheeler<sup>m</sup>, Cohomology of buildings and finiteness properties of  $\tilde{A}_n$ -groups, **Trans. Amer. Math. Soc.** 354 (2002) 47–61. (25/373 Q1)
- [11] J. Ramagge, A.G. Robertson and T. Steger, A Haagerup Inequality for  $\tilde{A}_1 \times \tilde{A}_1$  and  $\tilde{A}_2$  Buildings, **Geom. Funct. Anal.** 8 (1998) 702–731. (2/118 Q1)
- [10] J. Ramagge and W.W. Wheeler<sup>m</sup>, Posets and differential graded algebras, **J. Austral. Math. Soc. Ser. A** 64 (1998) 1–19. (258/373 Q3)
- [9] J. Ramagge and A.G. Robertson, Factors from trees, **Proc. Amer. Math. Soc.** 125 (1997) 2051–2055. (73/373 Q1)
- [8] J. Ramagge and A.G. Robertson, Triangle buildings and actions of type  $\text{III}_{1/q^2}$ , **J. Funct. Anal.** 140 (1996) 472–504. (8/118 Q1)
- [7] J. Ramagge, A realization of certain affine Kac-Moody groups of types II and III, **J. Algebra** 171 (1995) 713–806. (14/78 Q1)
- [6] J. Ramagge, On certain fixed point subgroups of affine Kac-Moody groups, **J. Algebra** 171 (1995) 473–514. (14/78 Q1)
- [5] J. Ramagge, Affine Kac-Moody groups of types II and III, **C. R. Math. Acad. Sci. Paris** 319 (1994) 207–212. (68/373 Q1)

#### Refereed conference papers:

- [4] J. Ramagge, Groups, representations and Haagerup’s inequality for buildings. Functional Analysis, Optimization and Applications, J. Giles and B. Ninness (eds), **Proc. CMA** 36 (1999) 121–126.
- [3] J. Ramagge and A.G. Robertson, Factors from buildings, **Contemp. Math.** 206 (1997) 165–167.

#### Other research publications:

- [2] B. Armstrong<sup>s</sup>, M. Fielding<sup>m</sup>, S. Kirk, and J. Ramagge, Factors affecting success in CHEM101 at UOW, **Austral. Math. Soc. Gaz.** 41 (2014) 91–98.
- [1] J. Ramagge, An introduction to Kac-Moody groups, **Austral. Math. Soc. Gaz.** 19 (1994) 207–212.

## RESEARCHER PROFILES

---

ResearcherID profile: <http://www.researcherid.com/rid/D-4449-2012>

ORCID profile: <http://orcid.org/0000-0001-9376-5712>

Google Scholar profile: <http://scholar.google.com.au/citations?user=JFfZfpAAAAAJ&hl=en>

My MathSciNet author ID is 352868. From USyd this can be accessed via

<http://www.ams.org.ezproxy1.library.usyd.edu.au/mathscinet/search/author.html?mrauthid=352868>  
although the initial segment of the address will vary for other institutions.



# Teaching

## TEACHING EXPERIENCE AND EVALUATIONS

---

I have taught classes from primary school level to postgraduate coursework level varying in size from 5 to over 500. The delivery style has included workshops, tutorials, lectures, electronic delivery, multi-campus video-conference, and multimedia presentations.

I evaluate my teaching and modify my practice in accordance with student feedback. At UOW the benchmark was the average of the first 8 questions on a standard questionnaire; my three last evaluations there all had averages of 5.8 out of a possible 6.

At UOW, I represented Academic Senate on the Strategic Course Development Committee.

## EDUCATIONAL DEVELOPMENT

---

At the University of Sydney I initiated a complete review of the entire curriculum in mathematics and statistics. This included: structural changes to align with a new strategic plan; streamlining of existing offerings and development of new offerings including Data Science; and increased use of personalised instruction.

I was a driving force in the development of the *Bachelor of Medical Mathematics* at UOW. The aim was to provide an attractive option for students who wanted to use the mathematical sciences to make a difference to society but who did not want to be teachers. The BMedMath is particularly popular with females.

I initiated and coordinated the development of a new major in the Bachelor of Mathematics and Finance in *Quantitative and Computational Trading*. This involved extensive consultation with industry partners *Tibra Capital* who are world leaders in algorithmic trading. Tibra Capital now provides over \$110,000 per year in scholarships and prizes at UOW.

I developed and implemented a suite of mathematics content subjects for prospective primary school teachers. My efforts in this area are global and include teaching into the *Vermont Mathematics Initiative*; I received an individual mention in the Go8 *Review of Education in Mathematics, Data Science and Quantitative Disciplines* by Professor Gavin Brown in 2009.

## EDUCATIONAL FUNDING

---

2009-2010	DEEWR: AMSI (Ramagge a member of the module-writing team), \$2,000,000 <i>The Improving Mathematics Education in Schools project</i>
2008-2011	ALTC: Porter <i>et al</i> (Ramagge a Unit Leader), LE8-783, \$220,000 <i>Building leadership capacity for the development and sharing of mathematics learning resources across disciplines and universities</i>
2008-2009	AMSI Summer School (Ramagge as Director), \$220,000

## PRESENTATIONS ON EDUCATION

---

2012	<i>Current patterns of mathematics study</i> , IISME, Sydney
2010-2011	UWA Year of Mathematics including <i>Mathematics in the spotlight</i> keynote at launch 3 Nov 2010 <i>Is maths a foreign language?</i> , 26 May 2011 <i>Teaching and Learning Mathematics in the Australian Curriculum</i> , 3 Nov 2011
2010	<i>Mathematics for Primary Educators</i> , IISME, Sydney Handout of presentation available for <a href="#">download</a>
2007	<i>Reflexiones sobre la convergencia europea y la enseïanza con un enfoque antípodo y un sabor matemático</i> , Universitat de València
2003	<i>Vermont Mathematics Initiative</i> , Vermont, USA

## Leadership, Governance and Service

### HEAD, SCHOOL OF MATHEMATICS AND STATISTICS AT THE UNIVERSITY OF SYDNEY

---

I have been Head of the School of Mathematics and Statistics at USyd since 1 January 2016. In my first year as Head of SoMS at USyd we hired 10 ongoing academic staff, undertook major curriculum reform, improved research performance, and delivered a surplus above budget.

### HEAD, SCHOOL OF MATHEMATICS AND APPLIED STATISTICS AT UOW

---

I was Head of the [School of Mathematics and Applied Statistics](#) at UOW from August 2009 to December 2013. During that time I was responsible for: leading both teaching and research in the School; operationalising the UOW strategic plan; and performance management of staff. Initially I was the direct manager of all staff including all postdoctoral researchers and all four professional staff. Over time I developed a more sophisticated managerial structure with more appropriate reporting lines for staff. Throughout my time as Head, I remained responsible for the management of all [Professors](#) in the School despite being an Associate Professor at the time of my appointment.

The School thrived under my leadership. We appointed 25 new academic staff, many funded from external sources, and supervised the third-largest cohort of research students in the mathematical sciences in Australia. We increased our performance and enhanced our reputation in both research and teaching.

In research we

- increased our annual income from national competitive grants by over 48% (from \$725k to \$1.08M per annum), including a [Future Fellow](#) and a [DECRA](#);
- increased our annual income from consultancy by over 560% (from \$449k to \$2.53M per annum);
- increased our Excellence in Research in Australia ([ERA](#)) score in 01 Mathematical Sciences from world class (3) to above world class (4).

In teaching and learning we

- increased our annual undergraduate EFTSL by over 24% (463 to 575);
- increased the average entry score of undergraduates in mathematics from a UAI of 79 to an ATAR of 87;
- received two national teaching citations (for [Rodney Nilsen](#) and [Caz Sandison](#));
- were part of a successful \$2M project, *Inspiring mathematics and science in teacher education*, funded by the Office of Learning and Teaching.

This success was due to the hard work of the staff in the School. However, as Head my job was to provide the environment in which activities that led to these successes were valued, encouraged, and supported.

There were also some challenges. Some were managerial, such as an academic whose appointment was not confirmed at the end of his probationary period. Some were critical incidents: the sudden unexpected death of a young member of staff; the suicide of a student; and the deaths of two other students in separate accidents. Although traumatic, the School emerged stronger and more united after each of these incidents.

My leadership is also reflected in the results of the *Your Voice* survey; the School's overall Engagement score increased from 85% in 2007 (the last survey prior to my appointment) to 91% in 2012 (the last survey during my tenure).



## AUSTRALIAN RESEARCH COUNCIL

---

As a member of the Engineering, Mathematics and Informatics panel of the [ARC College](#), 2010–2012 I helped award: Discovery Projects, Linkage Projects, Future Fellowships, Discovery Early Career Researcher Awards (DECRA), and Discovery Outstanding Researcher Awards (DORAs). During 2012–2014 I served on the [Australian Laureate Fellowship](#) Selection Advisory Committee. I was Deputy Chair of the DECRA panel in 2012 and Chair of the Australian Laureate Fellowship Selection Advisory Committee in 2014. In 2015 I served on the ERA Research Evaluation Committee for Mathematics, Information and Computation Sciences.

In a similar vein, I served on the Marsden Fund Mathematics and Information Sciences Panel for the Royal Society of New Zealand.

## REVIEW PANELS

---

I have served on three review panels: one review of a Faculty at the University of Sydney, one review of a School at another institution, and one review of an ARC Centre of Excellence.

## RELOCATING A RESEARCH TEAM

---

I negotiated the relocation of a team of four mathematicians from the University of Newcastle to the University of Wollongong in 2007. At the time this was a complete novelty in mathematics. I was not the most senior member of the team and am still awed by the trust placed in me by my colleagues during that process.

## DIRECTING EVENTS AND PROGRAMS

---

I was Director of the Australian Mathematical Sciences Institute [2009 Summer School](#) at UOW. This was a four-week residential summer school attended by 70 Honours and PhD students from around the country and overseas. My responsibilities as Director included: chairing the program committee; preparing the timetable and booking rooms; organising accommodation for students and lecturers; organising social events; coordinating photographers and media releases; mentoring the participants; and general day-to-day management. The budget for the event was \$220,000 and I delivered the event under budget.

In 2006 I was Director of the [Women@UoN](#) program at UoN, a professional development program for both academic and professional female staff. During my tenure as Director I broadened the scope of the program to better meet the needs of both academic and professional staff. Engagement significantly increased and attendance at events doubled.

## MENTORING AND PROFESSIONAL DEVELOPMENT

---

I have a long-standing interest in professional development at all levels. As well as directing [Women@UoN](#) I have: been a mentor for the UOW [Early Career Development Program](#) since its inception 2011 until my departure in 2015; mentored a Head of School from another Faculty; mentored UOW [Laureate Fellowship](#) applicants; presented at the AustMS Early Career Workshops in 2012, 2013, and 2016; mentored postgraduate students in the mathematical sciences via the [BH Neumann Prize](#) both personally and in writing <sup>1</sup>; and presented at Leadership programs. My role as Head of School necessarily involves mentoring, both informally and formally within the various career development processes at UOW and USyd. This has included career planning with outcomes ranging from promotions to successful Fellowship applications.

---

<sup>1</sup>J. Ramage, *How to make life hell for the judges of the B.H. Neumann Prize*, Austral. Math. Soc. Gaz. 23 (1996) 186–187.