

Report on AMSI/AustMS Workshop: Geometric and Asymptotic Group Theory with Applications 8

21–25 July 2014

The University of Newcastle

Murray Elder¹, Lawrence Reeves², Simon Smith³ and Anne Thomas⁴

Reason for workshop and target audience

GAGTA has become a key international meeting held annually in Europe and North America since 2006, and for the first time in the southern hemisphere in Newcastle in 2014.

The meeting put a spotlight on the Australian group theory community, bringing strong international researchers to our shores and temporarily keeping them here to collaborate and present lectures and short courses.

The purpose was to bring together people working in the area of geometric group theory, asymptotic group theory, and group based cryptography, as well as nearby areas, to communicate new cutting edge advances in the field, to expose students and early-career researchers to the leading directions in the field.

Australian based researchers, including students, benefited from exposure to material presented by experts in the field, as well as being able to network with both Australian and international researchers.

Organising committee

- Dr Murray Elder, The University of Newcastle
- Dr Lawrence Reeves, The University of Melbourne
- Dr Simon Smith, City Tech, CUNY
- Dr Anne Thomas, The University of Sydney

Topics covered

A variety of areas in geometric and combinatorial group theory, including asymptotic and probabilistic methods, as well as algorithmic and computational topics involving groups. In particular, areas of interest include group actions, isoperimetric functions, growth, asymptotic invariants, random walks, algebraic geometry

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over groups, algorithmic problems and their complexity, generic properties and generic complexity, and applications to non-commutative cryptography.

Invited presenters

- Yago Antolin Pichel, Vanderbilt
- Oleg Bogopolski, Dusseldorf
- Inna Bumagin, Carleton
- Laura Ciobanu, Neuchâtel
- Volker Diekert, Stuttgart
- Susan Hermiller, Nebraska
- Kate Juschenko, Northwestern
- John Meakin, Nebraska
- Alexei Miasnikov, Stevens
- Masato Mimura, Tohoku
- Eamonn O'Brien, Auckland
- Adam Piggott, Bucknell
- Sarah Rees, Newcastle (UK)
- Simon Smith, UWA/CUNY
- Enric Ventura, Catalunya
- Pascal Weil, Bordeaux

Summary of participants

Total number of participants: 55

Total number of AustMS members: 22

Country	Institution
Australia: 21	Univeristy of Melbourne: 3
Canada: 1	Univeristy of Newcastle (Aus): 8
France: 1	Univeristy of Sydney: 4
Germany: 3	Univeristy of Western Sydney: 2
India: 1	Univeristy of Western Sydney: 1
Israel: 1	Univeristy of Wollongong: 3
Japan: 1	
New Zealand: 1	
Spain: 2	
Switzerland: 2	
UK: 4	
USA: 17	

Number of ERCs
Students: 14
Postdocs: 10

Financial support

The meeting was generously supported by the following organisations:

- The National Science Foundation (USA)
- The Priority Research Centre in Computer Assisted Mathematics and Applications (CARMA), The University of Newcastle
- The Faculty of Science and Information Technology, The University of Newcastle
- The Office of the Deputy Vice Chancellor Research, The University of Newcastle
- The Australian Mathematical Sciences Institute
- The Australian Mathematical Society



Stereographic conference photo by Cameron Rogers.

Organisers opinion of success

The meeting was highly successful. Almost all participants remarked that the pace of the schedule, high quality of the research talks and informal discussions, catering, location, recreational activity on Wednesday afternoon and conference dinner on Thursday night all contributed to making this an outstanding event.

More information, including slides for some of the talks presented, can be found at the workshop webpage: <https://sites.google.com/site/gagta8/>.

We thank the AustMS sincerely for their generous support of this event.