



# Mathematical Research Institute MATRIX

**David Wood\***

MATRIX is Australia's first international and residential mathematical research institute. After a very successful start in 2016, the first MATRIX program in 2017 on hypergeometric motives has just finished at the time of writing. Participant feedback has been wonderful. The effects of research infrastructure in the form of a residential research institute are already noticeable in terms of interaction with the international community and international visibility of Australian research in the mathematical sciences. The next two MATRIX programs will be held in the winter break:

- *Computational Inverse Problems*, 11–23 June. Organisers: Tiangang Cui (Monash), Hans De Sterck (Monash), Markus Hegland (ANU), Youssef Marzouk (MIT), Ian Turner (QUT), Karen Willcox (MIT)
- *Integrability in Low-Dimensional Quantum Systems*, 26 June to 21 July. Organisers: Murray Batchelor (ANU), Patrick Dorey (Durham), Giuseppe Mussardo (SISSA Trieste), Paul Pearce (Melbourne), Chaiho Rim (Sogang, Seoul)

Five more programs are scheduled for October – December 2017. Three programs are scheduled for 2018 with more to come. It is great to see program organisers from a variety of Australian universities, including ANU, Melbourne, Monash, Newcastle, Queensland, QUT, RMIT, Sydney, UTS, UWA, Wollongong, along with a large number of international participants, including 2006 Fields Medalist, Andrei Okounkov.

**The next deadline for program proposals in 2018 or 2019 is  
Friday 21 April 2017.**

Guidelines for proposals and expressions of interest (which may be submitted at any time) are available on our website [www.matrix-inst.org.au](http://www.matrix-inst.org.au).

## **MATRIX Programs**

The MATRIX Scientific Committee selects programs on scientific excellence as well as on the participation rate of high profile international participants, among other criteria. MATRIX programs tend to have ample unstructured time to encourage collaborative research rather than having a traditional conference format. Longer term programs, lasting three weeks or more, could have an embedded conference or lecture series. Shorter workshops focussing on a special theme are also welcome. MATRIX offers additional support to participants with families through the MATRIX Family Fund.

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<http://www.matrix-inst.org.au/>

## MATRIX Minors

MATRIX Minor programs are self-funded visits to MATRIX to make use of the available office space and facilities at the Creswick Campus outside program times, for example to work intensively in a small group. Such visits are subject to the approval of MATRIX but can be arranged by sending an email request that briefly outlines the proposed research and timings.

## Book Series

Each year Springer will publish a book on behalf of MATRIX dedicated to articles related to its activities. The Editorial Board consists of David Wood (editor-in-chief), Jan de Gier, Cheryl Praeger and Terence Tao. The organisers of each program appoint a guest-editor, who organises appropriate peer-review and ensures scientific quality. Articles can be peer-reviewed, containing original results, or reviews on a topic related to the program, or non-peer-reviewed expository lecture notes based on talks or activities at MATRIX. The first volume is expected to be published in September 2017.

## Outreach

In November 2016, MATRIX hosted a residential outreach event for secondary school teachers as part of a larger outreach program sponsored by ACEMS. This event provided school teachers with the skills to run *Doing maths like a research mathematician* events. The feedback said the event was hugely successful.

## Questions

Comments, suggestions and requests are always welcome. Please send these, as appropriate, to the Director, Jan de Gier ([jdg@matrix-inst.org.au](mailto:jdg@matrix-inst.org.au)), Deputy Director, David Wood ([davidw@matrix-inst.org.au](mailto:davidw@matrix-inst.org.au)), Manager, Sally Zanic ([sallyz@matrix-inst.org.au](mailto:sallyz@matrix-inst.org.au)), or the Chair of the Advisory Board, Tony Guttmann ([guttmann@unimelb.edu.au](mailto:guttmann@unimelb.edu.au)).



Professor Wood's research interests lie in discrete mathematics and theoretical computer science, especially structural graph theory, extremal graph theory, graph colouring, and combinatorial geometry. He holds an ARC Future Fellowship, is an Editor-in-Chief of *The Electronic Journal of Combinatorics*, and is Deputy Director of MATRIX. He has worked at Monash University since 2012.