



The Australian Mathematical Sciences Institute Research & Higher Education Program

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About AMSI

AMSI is a national collaboration of Australian universities, government agencies and societies

- 31 universities
- 4 government agencies
- 3 learned societies

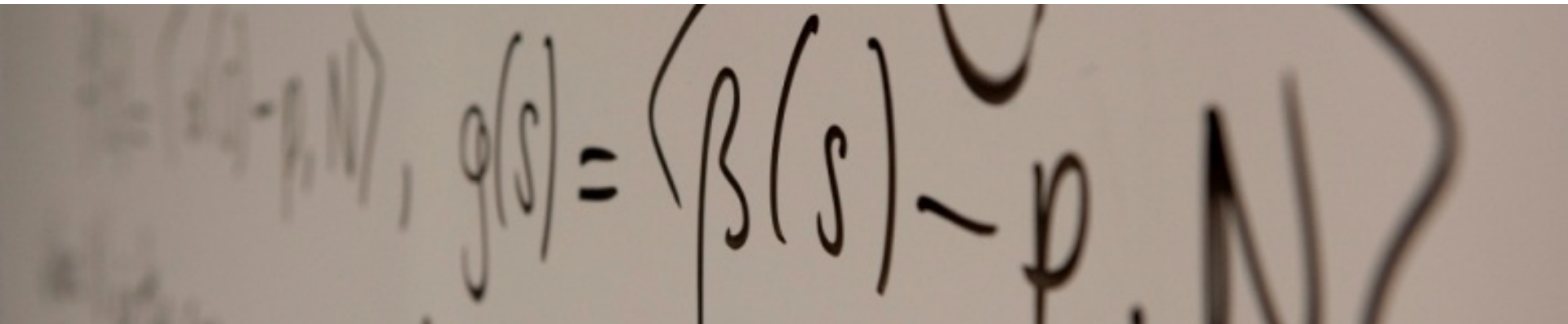




About AMSI

Our mission

The radical improvement of mathematical sciences capacity and capability in the Australian community





About AMSI

AMSI programs

- Schools Education
- Research & Higher Education
- AMSI Intern
- Outreach & Advocacy





Research & Higher Education program

The program

- Facilitates research collaborations
- Supports research and research training
- Communicates Australian research to the wider community

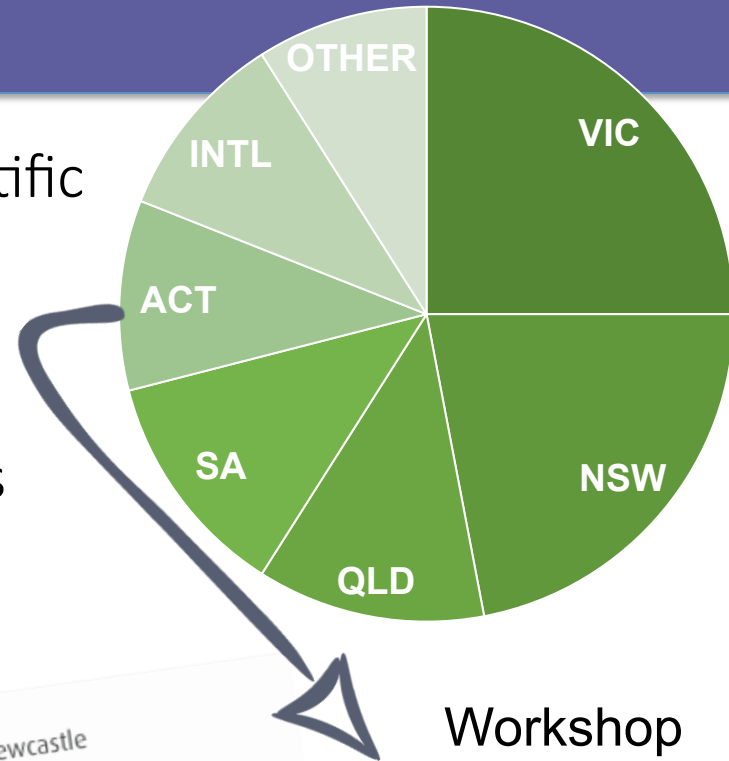




Facilitating National Collaboration

Internationally recognised program of scientific events

- 25 scientific workshops & conferences
- Travel support for students & researchers



Workshop participation by location

Interactions between operator algebras and dynamical systems
30 June–4 July, University of Wollongong

2014 Australian Mathematical Sciences Student Conference
2–4 July, University of Newcastle

IMS-FPS-2014 (Institute for Mathematical Statistics - Finance, Probability and Statistics group)
2–6 July, University of Technology, Sydney

AMSI Winter School: Contemporary Aspects of Cryptography
7–18 July, The University of Queensland

The AMSI/AustMS conference on geometric analysis and stochastic methods in geometry
21–25 July, The University of Queensland

Workshop in Harmonic Analysis and its Applications
21–25 July, Macquarie University

New opportunities at the interface between ecology and statistics
2 July, The University of New South

Recycling Rocks:

AMSI Summer School 2015
3–29 January 2015, University of Newcastle

Algebraic, Number Theoretic and Graph Theoretic Aspects of Dynamical Systems
2–6 February 2015, University of New South Wales

South Pacific Continuous Optimization Meeting
8–12 February 2015, University of South Australia

Symmetries and Spinors: Interactions Between Geometry and Physics
13–17 April 2015, The University of Adelaide



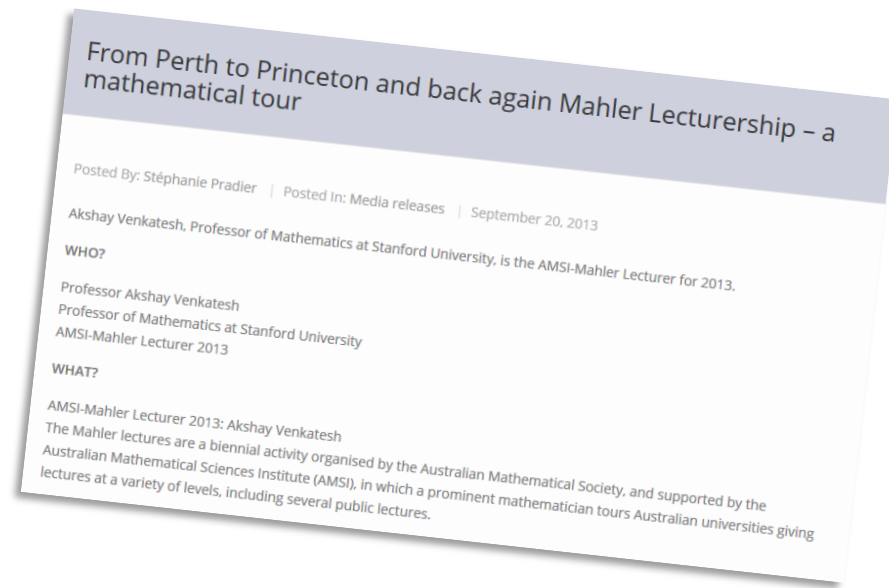
Bringing international expertise to Australia

Annually AMSI supports 50 international expert visits to Australia

- Plenary speakers at events
- 2-4 week national lecture tours



Prof. Manjul Bhargava
2015 Mahler Lecturer





Facilitating National Collaboration

National Seminar Series

- Available nationally via Advanced Collaborative Environment (ACE) Network
- 10 specialist lectures



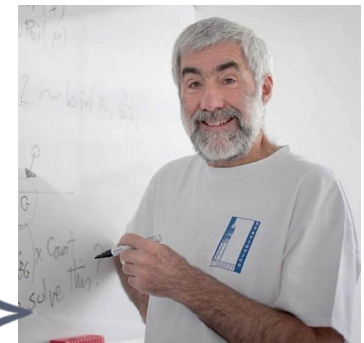
NPR Math Guy

Debunker of Pseudo-
Mathematics



Fields Medallist

2013 Prime
Minister's Science
Prize winner





Facilitating National Collaboration

Maths of Planet Earth Network



- Agency-University research collaborations
- Engagement with students
- Annual conference



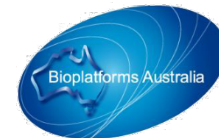


Industry and cross-disciplinary collaboration

- BioInfoSummer
- Mathematics and Statistics in Industry Study Group (MiSG)
- Industry-Research workshops
- AMSI Intern



MONASH
University



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Training the next generation of researchers

600 students and ECRs participate annually

- Summer and Winter Schools
- Vacation Research Scholarships
- PhD student Conference
- Early Career Workshop
- Shared Honours Program





The next generation



Females make up only **30%** of undergraduate and postgraduate enrolments in mathematics

- Raise awareness of issues for Women in Mathematics
- Women in Mathematics events
- Speakers at events
- Representation on committees
- Target of 30% female participants at all AMSI events



Outreach & Advocacy

Researcher interviews

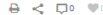


HOME ABOUT AMSI RESEARCH SCIENTIFIC TRAINING NEWS Q

Cabbages have twice as many genes as you. No? Yes... really!

HOME / EVENT NEWS / BIOINFOSUMMER / CABBAGES HAVE TWICE AS MANY GENES AS YOU. NO? YES... REALLY!

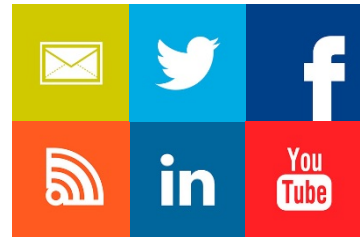
Posted 3 October 2014 in BioInfoSummer: Interviews



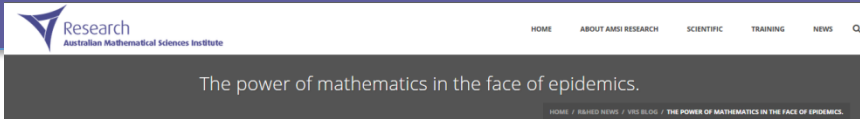
Chris Overall is bred of good stock; not only is he Australian, but his Post Doctoral supervisor is a Nobel laureate (Dr Michael Smith, invented site-directed mutagenesis). I was lucky enough to speak with Chris last week about his current research (terminomics) and his involvement in BioInfoSummer 2014 (BIS14).

Chris prefaced our conversation by declaring that he comes to bioinformatics not as a mathematician or a statistician or a computer scientist, but as a user. In fact, he was quite pleased when the Australian Mathematical Sciences Institute (AMSI) approached him to give the opening lecture at BIS14.

"I am not going to talk about the past of bioinformatics, where it has come from where it is going. I am not qualified to do that," Chris said. "I would like my audience to leave aspiring to be Steve Jobs — the Apple — of bioinformatics. To design and code easy to navigate, beautiful programs and interfaces that users, like me, want to come back to and use again and again."



Social Media



Weekly Blog



In today's increasingly connected world, the reality of infectious epidemics is a permanent feature in the background of our modern consciousness. From movies like Contagion to the 28 Days Later franchise, the notion of a destructive, unseen infection spreading through a city or country is capturing more of the general public's imagination. The problem of controlling and stopping the spread of an epidemic is a very real one for public health professionals and when coupled with the reality of a limited quantity of vaccine, the question quickly becomes, "How can we stop an epidemic from spreading with the least vaccine?". An answer to this question can be found using mathematics.

Mathematicians have developed models of populations that reflect the fact that different types of individuals will react to and spread an infection in different ways. These models can also be used to predict the spread of an infection through a population of adults and children and compared the effects of three different vaccination strategies: one for an individual, one for an adult or a child. The figure below shows the

Summer School

Kate Atwell

Bachelor of Mathematical Sciences
University of Adelaide

We all know how to queue. Lining up for our morning coffee; pressing our touchscreen umpteen times before speaking to a human; queues can be plain and simple, or utterly complex. What we may not know is that a whole branch of mathematics is devoted to studying the intricate nature of waiting.

Kate Atwell does. She recently embarked on an honours project that looks at complicated queues – like calling the bank.

"First an automated voice asks you to press a number, then you may have to give several other responses before finally getting to someone from the bank. My research looks at how you move forward through these options — one phase at a time — until you reach the end of the queue: the real person!" Kate said.

Kate accuses a high school teacher for her love affair with maths. "This teacher had a mathematics degree; and a passion for mathematics that was inspiring, motivating and contagious," she said.

So the next time you're in a queue spare a thought for Kate and the high-end mathematics she uses to calculate how you wait, and where your choices take you.



"The best thing about AMSI's Summer School was being able to study a course not offered at my university. It opened my eyes to fascinating fields of mathematical research."



Student Profiles



Outreach & Advocacy

Careers
Events



Opinion
Pieces



Public Events





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