

# IMS Annual Scientific Meeting 2019

## National University of Ireland, Galway

SEPTEMBER 5TH-6TH

The 29th annual scientific meeting of the society was hosted by the School of Mathematics, Statistics and Applied Mathematics at the National University of Ireland, Galway on the first Thursday and Friday in September. The organisers were Angela Carnevale, Michel Destradre and Götz Pfeiffer.

Opening welcome remarks were made by Rachel Quinlan, Head of the School of Mathematics, Statistics and Applied Mathematics at NUIG, and by Pauline Mellon, President of the IMS.

The scientific programme contained a mixture of lectures of varying lengths, given by speakers from Irish institutions and from abroad at various career stages, on topics ranging from algebra, geometry and combinatorics to applied mathematics and mathematics education. (The full list of talks follows below.)

Friday's schedule also included the Society's AGM which is reported on separately in these pages.

The web page for the meeting, which includes abstracts of presented talks, is archived at

<http://september.nuigalway.ie/>

The organisers are grateful to all who participated in the meeting but especially to our speakers whose lectures were given in the following sequence.

### Thursday 5th September

Martin Kerin (WWU Münster/NUI Galway) - *Highly connected 7-manifolds with non-negative sectional curvature.*

Cian O'Brien (NUI Galway) - *Alternating Signed Bipartite Graph Colourings.*

Tobias Rossmann (NUI Galway) - *Groups, growth, and graphs.*

Aoife Hennessy (Waterford IT) - *Riordan arrays and weighted lattice paths.*

Francesco Brenti (Universita' di Roma "Tor Vergata") - *Permutations, tensor products, and Cuntz algebra automorphisms.*

Hazel Murray (Maynooth University) - *Guessing passwords.*

### Friday 6th September

Dónal O'Regan (NUI Galway) - *A result of Andrzej Granas (1929-2019).*

David Henry (UCC) - *Exact, free-surface equatorial flows.*

Marianne Leitner (TCD/DIAS) - *Convolutions on the complex torus.*

Valentina Balbi (UL) - *The mechanics of a "twisted" brain.*

Helena Šmigoc (UCD) - *Some Results on Completely Positive Matrices.*

Mark Dukes (UCD) - *Chip-firing, toppling regimes, and combinatorial structures.*

Mike Welby (NUI Galway) - *Genus  $g$  Zhu Recursion for Vertex Operator Algebras.*

Maurice O'Reilly (DCU) - *Ireland and its place in European Research in Mathematics Education.*

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