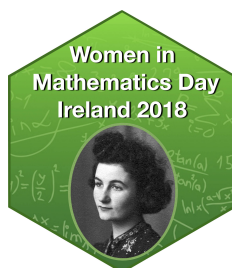


Reports of Sponsored Meetings

WOMEN IN MATHEMATICS DAY IRELAND 2018
29 AUGUST 2018, O'BRIEN CENTRE FOR SCIENCE, UCD



Organisers

School of Mathematics and Statistics, University College Dublin

Co-Chairs: Isabella Gollini, Aoibhinn Ní Shúilleabháin

Committee members: Michelle Carey, Vasiliki Dimitrakopoulou, Mark Dukes, Claire Gormley, Gabrielle Kelly, Pauline Mellon, Neil O'Connell, Adamaria Perrotta, Michael Salter-Townshend, John Sheekey, Helena Smigoc.

The Women in Mathematics Day Ireland (WIMDI) has become an annual conference since its inauguration in 2010. The conference is a multi-faceted event that includes plenary talks, academic and industrial research talks, poster sessions for students, and the centrepiece of this year's event has been the celebration and acknowledgement of Sheila Tinney's work in the mathematical sciences and marks the centenary of her birth.

Dr. Sheila Tinney was the first Irish woman to receive a PhD in Mathematics, was the first female fellow of DIAS (Dublin Institute of Advanced Studies), was one of the first four women to be admitted to the Royal Irish Academy and also lectured at UCD.

This year's event attracted almost 150 people from all over Ireland, and the audience at the event included girls from St Mark's Community School, students, lecturers and general public from around the country.

The day was opened by Minister for Higher Education Mary Mitchell O'Connor and the UCD Vice-President for Research, Innovation & Impact Prof. Orla Feely.



In celebration of the centenary of Sheila Tinney's birth, an Irish Scientist plaque was unveiled in her honour. The plaque was sponsored by the UCD College of Science and is now hanging at the entrance to the School of Mathematics & Statistics. As an additional acknowledgement of this special celebration, the national Women in Technology & Science (WITS) organisation presented the UCD School of Mathematics & Statistics with a print of the Vera Klute portrait of Sheila Tinney. Celebrations of Sheila Tinney continued with presentations from her son Hugh and daughter Ethna.



The day followed with scientific talks made to be addressed to the very diverse audience.

The second half of the morning contained two scientific and inspirational talks: Dr Doireann O’Kiely, a UCD graduate and now a postdoc in the University of Oxford spoke on her work in thin films showing how mathematical modelling enables the exploration of practical problems and Prof Sally McClean (Ulster University) gave the keynote entitled “The working model: making an impact with mathematics”.

Nine students presented at the poster session which took place during the lunch break. This provided an important opportunity for the students to engage with peers, meet leaders in academia and industry and communicate their work. It also provided insight to post-primary and undergraduate attendees on potential paths for their studies in mathematical sciences. WITS sponsored a prize for the best poster.



After lunch there were three more talks by Dr Sandra Collins (Director of the National Library Ireland) who spoke about how mathematics has enabled to develop a most interesting career, Prof Ailish Hannigan (University of Limerick) who spoke on her work on participant modelling in health care and Dr Anca Mustata (University College Cork) who described her research on algebraic geometry.

The second part of the afternoon session was more centred on future generations and included presentations on the Girls Maths Olympiads and two talks on initiatives about how to improve gender equality in mathematics: Dr Romina Gaburro (University of Limerick) talked about the European Women in Mathematics network and Dr Rochelle Fritch presented the SFI Gender Strategy 2016-2020.

The programme was as follows:

09:00	Registration & Tea/Coffee
09:30	<p>Opening Address</p> <ul style="list-style-type: none"> • Minister Mary Mitchell O'Connor (Minister of State for Higher Education) • Prof. Orla Feely (UCD Vice-President for Research, Innovation & Impact) • Unveiling of plaque for Sheila Tinney
09:50	<p>Celebration of Sheila Tinney Chair: Aoibhinn Ní Shúilleabháin</p> <ul style="list-style-type: none"> • Hugh Tinney and Ethna Tinney • Presentation of portrait of Sheila Tinney - Dr Marion Palmer of WITS • Dr. Doireann O'Kiely (Postdoctoral Research Assistant at Oxford)
11:00	Tea/Coffee
11:30	<p>Keynote lecture Chair: Gabrielle Kelly</p> <ul style="list-style-type: none"> • Prof. Sally McClean (Professor of Mathematics, Ulster University)
12:30	Lunch & Poster session
13:50	<p>Distinguished Women in the Mathematical Sciences Chair: Claire Gormley</p> <ul style="list-style-type: none"> • Dr. Sandra Collins (Director of the National Library) • Prof. Ailish Hannigan (Associate Professor of Biomedical Statistics at University of Limerick)
15.00	Best Poster Award
15.10	<p>Distinguished Women in the Mathematical Sciences Chair: Mark Dukes</p> <ul style="list-style-type: none"> • Dr. Anca Mustata (Lecturer in Mathematics at University College Cork)
15.45	<p>Girls Mathematics Olympiad Chair: Pauline Mellon</p> <ul style="list-style-type: none"> • Mayya Golitsyna (Deputy Leader of the Irish team for the 2018 European Girls' Mathematical Olympiad) • Anna Mustata (International Mathematical Olympiad & European Girls Mathematical Olympiad 2017) • Laura Cosgrave (European Girls Mathematical Olympiad 2018) • Tianyiwa Xie (European Girls Mathematical Olympiad 2018) • Yixin Huang (European Girls Mathematical Olympiad 2018)
16.10	<p>Initiatives on improving gender equality in mathematics and closing remarks Chair: Isabella Gollini</p> <ul style="list-style-type: none"> • Dr. Romina Gaburro - regional coordinator for Ireland of the European Women in Mathematics (EWM) • Dr. Rochelle Fritch - SFI Gender Strategy
16.30	Drinks reception

Poster Session

Presenter	Other authors Supervisors	Affiliation	Title
Nisreen Alokbi	Graham Ellis	NUI Galway	Mapper algorithm and groupoid methods for data analysis
Faiza Alssaedi	Niall Madden	NUI Galway	Numerical solution of a complex-valued singularly perturbed differential equation
Hannah Conroy Broderick	Yipin Su Weiqiu Chen Michel Destrade	NUI Galway	Wrinkling in soft dielectric plates
Leanne Durkan	Niels Warburton Adrian Ottewill	UCD	Gravitational Waves
Róisín Hill	Niall Madden	NUI Galway	Balanced norms and mesh generation for singularly perturbed reaction-diffusion problems
Emma Howard	Maria Meehan Andrew Parnell	UCD	Identifying the reasons behind students' engagement patterns
Jennifer Kelly		TCD	Whole school 'Buy in' to numeracy: Developing a new cross curricular DEIS Numeracy policy on L2LP content through lesson study methodology accessible to all.
Samyukta Venkataramanan	Stephen O'Sullivan	DIT	Interest Rate Calibration and Parameter Estimation of Affine Term Structure Models
Jinbo Zhao	Michael Salter-Townshend Adrian O'Hagan	UCD	Morbidity Risk Distributions of Common Life-Shortening Conditions Based on Genetic Data

Report by Isabella Gollini, University College, Dublin

isabella.gollini@ucd.ie

BRITISH AND IRISH GEOMETRY MEETING
1-2 JUNE 2018, QUEEN'S UNIVERSITY, BELFAST

The British and Irish Geometry Meeting was held at Queen's University Belfast on 01–02 June 2018, organised by Brian McMaster and Thomas Hüttemann. The international research conference incorporated the annual Irish Geometry Conference this year, with participants and speakers from Ireland, the UK and Germany. The presentations covered the wide range of geometry research of the lively research communities in Ireland, the UK and Europe, and highlighted connections to related areas such as group theory and homotopy theory. Titles and abstracts of the talks are listed below.

BAUMEISTER, BARBARA (Universität Bielefeld, Germany): *The smallest non-abelian quotient of $\text{Aut}(F_n)$*

The non-abelian finite simple group $L_n(2)$ is a quotient of $\text{Aut}(F_n)$ (factor out F'_n and then reduce modulo 2). In the talk I will confirm the conjecture by Mecchia-Zimmermann that this is the smallest non-abelian finite quotient of $\text{Aut}(F_n)$. On the way some other nice and new results will appear.

This is joint work with Dawid Kielak and Emilio Pierro.

BERNDT, JÜRGEN (King's College London, UK): *Symmetries in Riemannian geometry*

Symmetry is one of the fundamental concepts in geometry. In the talk I plan to give a survey about some old and new results in Riemannian geometry involving continuous symmetries. In the first part of the talk I will motivate some concepts involving symmetry. This will lead us to homogeneous spaces and symmetric spaces, which were studied thoroughly by Felix Klein and Élie Cartan respectively. The modern and quite general question I plan to discuss is: What spaces are close to homogeneous spaces and symmetric spaces, and why might they be of interest?

BRADY, TOM (Dublin City University, Ireland): *Triangulating the permutahedron*

For an Artin group $A(W)$ of finite type W , we construct a homotopy equivalence from the $A(W)$ classifying space of Salvetti to the one defined by noncrossing partitions. The construction involves the type- W associahedron. This is joint work with Emanuele Delucchi and Colum Watt.

BURNS, JOHN (NUI Galway, Ireland): *Graded Lie Algebras — their representations and applications*

Let $M = G/P$ be a rational homogeneous manifold, with P a maximal parabolic subgroup of a complex simple Lie group G . Viewing the Lie algebra of G as a graded Lie algebra in a natural way, we use some simple representation theory to give uniform (for all complex simple G) formulae for the dimension of M , the dimensions of the irreducible factors of the restriction of the isotropy representation to a Levi subgroup of P and the nef values of homogeneous line bundles on M . We also give a selection of applications of our results. This is joint work with Adib Makrooni.

HELLER, LYNN (Universität Hannover, Germany): *Recent progress in integrable surface theory*

I consider surfaces in 3-space which are critical with respect to certain geometric variational problems, such as CMC and minimal surfaces and (constrained) Willmore surfaces. In this talk I want to give an overview on recent results on the construction of new examples of higher genus CMC surfaces and on the identification of constrained Willmore minimizers in the class of conformal tori. Moreover, by viewing minimal surfaces in different space forms within the constrained Willmore integrable system, counterexamples to a question of Simpson are constructed. This suggests a deeper connection between Willmore surfaces, *i.e.*, rank 4 harmonic maps theory, and the rank 2 theory of Hitchin's self-duality equations.

This talk is based on joint work with Cheikh Birahim Ndiaye, Sebastian Heller and Nicholas Schmitt.

KANG, SUNGKYUNG (University of Oxford, UK): *A transverse knot invariant from $\mathbb{Z}/2$ -equivariant Heegaard Floer cohomology*

A $\mathbb{Z}/2$ -equivariant Heegaard Floer cohomology of based double coverings of S^3 along a based knot, defined by Lipshitz, Hendricks and Sarkar, is a well-defined isomorphism class of $F_2[\theta]$ -modules. In this talk, we will see why this invariant is a natural invariant, and is functorial under based cobordisms. Then we will observe that, given a based transverse knot K in the standard contact S^3 , we have a well-defined element in the $\mathbb{Z}/2$ -equivariant Heegaard Floer cohomology, which depends only on the transverse isotopy class of K , and this element is functorial under certain class of symplectic cobordisms.

KEDRA, JAREK (University of Aberdeen, UK): *On qualitative counting of closed geodesics*

Let (X, d) be a geodesic metric space, *e.g.*, a complete Riemannian manifold. We consider closed geodesics passing through the basepoint $*$ in X and ask the following questions:

- (1) Do they generate the fundamental group of X ?
- (2) If yes, then how fast?

We measure the speed of generation as follows. If there exists a number $C > 0$ such that every element of the fundamental group of X is a concatenation of at most C closed geodesics then we say that this is fast generation. On the other hand, if no such number C exists then the generation is slow.

I will present various examples and show how to answer the above questions in certain cases. This is joint work with Michał Marcinowski.

MONTGOMERY, TASHA (Queen's University Belfast, UK): *On the projective line associated to a strongly \mathbb{Z} -graded ring*

It is known that the K -theory of the projective line over an arbitrary commutative ring splits into two copies of the K -theory of the ground ring. This was generalised, by Bass and Quillen, to noncommutative rings. My aim for this talk is to give a further generalisation, by considering a projective line associated to a graded ring. The process, perhaps surprisingly, works much like in the “classical” case, however new phenomena are quickly encountered. For example, the familiar family of twisting sheaves from algebraic geometry now depends on a two-parameter construction as opposed to just one. This work is part of my ongoing PhD thesis project under the supervision of Dr. Thomas Hüttemann.

PAUSINGER, FLORIAN (Queen's University Belfast, UK): *On lattices and their shortest vectors*

The hexagonal lattice gives the highest density circle packing among all lattices in the plane. In this talk I first recall the basic notions about lattices in the plane, before I construct a sequence of lattices with integer bases that approximate the hexagonal lattice. The construction uses elementary number theory and is based on particular palindromic continued fraction expansions. As an application I obtain lattices modulo N with longest possible shortest distances.

REES, MARY (University of Liverpool, UK): *An example of puzzles and parapuzzles in complex dynamics*

Topologically, a puzzle (in complex dynamics) is a sequence of successively larger finite graphs on the Riemann sphere. Dynamics, and the iterative definition of the graphs is given by a holomorphic map f , which, for present purposes, we will take to be a rational map of the Riemann sphere. Then the first graph in the sequence, say G_0 , satisfies $G_0 \subset f^{-1}(G_0)$. We then define $G_n = f^{-n}(G_0)$, so that $G_n \subset G_{n+1}$ for all n . Puzzles tend to be locally persistent. For instance if $f = f_0$ is in a family of maps f_λ parametrised by an open subset Λ of the complex plane with $0 \in \Lambda$ then it often happens (and can be proved) that G_0 can be isotoped to a graph $G_0(\lambda)$ with $G_0(\lambda) \subset f_\lambda^{-1}(G_0(\lambda))$, at least for λ near 0. We can then define $G_n(\lambda) = f_\lambda^{-n}(G_0(\lambda))$. It is then not usually true that the graphs $G - n(\lambda)$ are all isotopic. But the way in which the graphs change can often be recorded in a parapuzzle.

The most famous puzzles and parapuzzles are the *Yoccoz* puzzles and parapuzzles, so-called after J-C Yoccoz made important advances in a conjecture called MLC using them, in the 1980's. The aim is to look at these famous examples briefly and discuss how the ideas can apply to other situations and more generally.

SHAKIR, QAYS (NUI Galway, Ireland): *Contacts of Circular Arcs Representation of Certain Torus Graphs*

We will discuss representations of surface graphs as contact graphs of configurations of circular arcs. In this representation, vertices of the graphs are represented by circular arcs in surfaces of constant curvature while their edges are represented by the contacts of circular arcs. We first review some previously known results for contact representations in the plane. Then we show that every (2,2)-tight torus graph can be represented by a circular arc configuration in the flat torus. This work forms part of a joint project with James Cruickshank, Derek Kitson and Stephen Power.

SUGRUE, DANNY (Queen's University Belfast, UK): *Rational G -Mackey functors for G profinite*

Rational Mackey functors for a compact topological group G are a useful tool for modelling rational G -equivariant cohomology theories. Having a better understanding of Mackey functors will enhance our

understanding of G -cohomology theories and G -equivariant homotopy theory in general. In the compact Lie group case, rational Mackey functors have been studied extensively by John Greenlees (and others). In this talk we will discuss what can be shown in the case where G is profinite (an inverse limit of finite groups).

WEISS, ITTAY (University of Portsmouth): *A metric formalism for topology with a view to persistence theory*

Topological Data Analysis (TDA) employs topological techniques to identify geometric features in data involving, for instance, clustering problems and the persistence of phenomena to distinguish between relevant information and noise. The motivating philosophy behind topological approaches to geometric problems involves the inherent blindness of topology to certain metric issues such as dimensionality (of data). This apparent clash of philosophies embodied by TDA is present at the outset: the techniques of TDA are topological but require a metric. Based on work of Kopperman and Flagg from around 1990 it will be shown that there is a suitable generalisation of the concept metric space giving rise to a genuinely metrically flavoured formalism equivalent to topology. This metric formalism for topology will be explored with a heightened emphasis on metric geometrical aspects.

Report by Thomas Hüttemann, Queen's University Belfast
t.huettmann@qub.ac.uk

IRISH MATHEMATICS LEARNING SUPPORT NETWORK 11TH
ANNUAL WORKSHOP
15 DECEMBER 2018, O'BRIEN CENTRE FOR SCIENCE, UCD

The 11th Annual Workshop of the Irish Maths Learning Support Network (IMLSN) took place on December 15 2017 in North West Regional College, Derry/ Londonderry.

The theme of the workshop was *Supporting students, raising standards in maths at secondary and Higher Education level* and delegates included second level teachers, tutors and lecturers involved in mathematics and statistics support in further and higher education and more generally in third level mathematics education.

The keynote speakers were Ciarán Mac an Bhaird (Maynooth University), Chris McCallion (Letterkenny IT) and Jonathan Cole

(Queens University). In his talk *Evaluating Maths Learning Support Provision: What is the point?*, Ciarán Mac an Bhaird discussed the issues involved in gathering and analysing usage / feedback data and its usefulness in evaluating the effectiveness of Maths Learning Support Services. He focused on the vast experience of the Maynooth MLC in this regard.

Open Source Freeware as a Tool for Learning Support was the title of both a paper and practical demonstration given by Chris McCallion. They related to a teaching project underway as part of an Access Programme at LYIT, in which open source and freeware products are being used to provide both student learning support tools and assessment tools.

The paper *Formative assessment in mathematics using log books, peer assessment and reflection*, presented by Jonathan Cole considered the effectiveness of incorporating log books, with weekly worksheets, reflections and peer-feedback. These were introduced as part of the redesign of a core mathematics module for first year Engineering students. The impact of which was represented by improvements in the student experience, exam performance, preparedness for second year and overall confidence in their academic ability.

Over the course of the day there were three additional talks which detailed the impact of maths learning support services on student progression at UL (Olivia Fitzmaurice, Aoife Guerin and Richard Walsh UL), highlighted the important socio-cultural role played by maths support centres (Kirsten Pfeiffer UCG) and outlined the observations of the first full-time maths learning support tutor in Ireland (Peter Mulligan MU).

In addition the afternoon session included three TEL related parallel workshops. These practical sessions focused on different technologies and how they can be used to enhance teaching and learning of mathematics. They were: *Open Source Freeware as a Tool for Learning Support* (Chris McCallion LYIT); *Enhanced Technologies Interactive Classroom Delivery* (Martin Peoples NWRC) and *Developing Critical Thinking and Problem Solving Skills for Mathematics* (Franz Schlindwein, Founder of Qubizm Ltd).

The workshop provided delegates with an opportunity to share experiences, discuss challenges and find potential solutions to issues encountered in maths support provision. The organisers are grateful

for financial support from the Irish Mathematical Society.

Report by Fiona Lawless, North West Regional College,
Derry/Londonderry
fiona.lawless@dkit.ie

INTERNATIONAL CONFERENCE ON POTENTIAL THEORY,
COMPLEX ANALYSIS AND APPLICATIONS
11-25 JUNE 2018, UCD DUBLIN

International Conference on Complex Analysis, Potential Theory and Applications” was held at University College Dublin on 11-15 June, 2018. It attracted 76 participants from 22 countries, and featured 18 keynote talks by international experts from Ireland, Canada, Sweden, Norway, USA, Spain, Greece, Germany, Czech Republic and Japan. In parallel afternoon sessions 39 further talks covered a wide range of themes in Complex Analysis and Potential theory. The conference marked the 60th anniversary of Professor Stephen J. Gardiner MRIA, who has contributed extensively to the fields of Potential Analysis and Complex and Harmonic Approximation.



The following list of plenary speakers and their talks provide a flavour of the conference:

1. HIROAKI AIKAWA (Hokkaido University, Japan)
Global integrability of supertemperatures

2. CATHERINE BÉNÉTEAU (University of South Florida, USA)
Optimal polynomial approximants: Zeros and Limit Points
3. JANA BJÖRN (Lindköping University, Sweden)
Fine potential theory via analysis on metric spaces
4. TOM CARROLL (University College Cork, Ireland)
The sharp constant in the Sobolev-Poincaré inequality for a region
5. WOLFHARD HANSEN (University of Bielefeld, Germany)
Nearly hyperharmonic functions and Jensen measures
6. DMITRY KHAVINSON (University of South Florida, USA)
What is an "inner function"?
7. ERIK LUNDBERG (Florida Atlantic University, USA)
Polynomial and entire solutions to the Dirichlet problem
8. MYRTO MANOLAKI (University of South Florida, USA)
Behaviour of optimal polynomial approximants on the unit circle
9. JÜRGEN MÜLLER (University of Trier, Germany)
Generic boundary behaviour of Taylor series
10. VASSILI NESTORIDIS (University of Athens, Greece)
From universality to generic non-extendability and totally unbounded functions in new localized function spaces
11. IVAN NETUKA (Charles University Prague, Czech Republic)
Stephen J. Gardiner's contribution to potential theory
12. JOAQUIM ORTEGA-CERDA (University of Barcelona, Spain)
Chebyshev quadrature formulas in algebraic manifolds
13. JORDI PAU (University of Barcelona, Spain)
Weak factorization of Bergman and Hardy spaces
14. Thomas Ransford (Université Laval, Canada)
A uniform boundedness principle in pluripotential theory
15. EDWARD SAFF (Vanderbilt University, USA)
Energy Bounds for Minimizing Riesz and Gauss Configurations
16. KRISTIAN SEIP (Norwegian University of Science and Technology, Trondheim, Norway)
Hardy and BMO spaces of Dirichlet series
17. HENRIK SHAHGOLIAN (Royal Institute of Technology Stockholm, Sweden)
Free boundaries on Lattice, and their scaling limits
18. TOMAS SJÖDIN (Lindköping University, Sweden)

Some applications of Partial Balayage

The scientific programme and further details can be found at <https://maths.ucd.ie/iccapta>.



The organizers of the conference, Dr Marius Ghergu and Dr Hermann Render are grateful to UCD, SFI and the Irish Mathematical Society for financial support of the conference.

Report by Hermann Render, University College, Dublin
hermann.render@ucd.ie

QUANTUM INFORMATION THEORY
15 FEBRUARY 2018, UNIVERSITY COLLEGE CORK

A day of talks on aspects of quantum information theory was held at UCC on 15 February 2018, jointly organised between the School of Mathematical Sciences and the Department of Physics. There were four talks, each of one hour's duration, by a range of speakers from across Europe, to an audience with from a wide variety of backgrounds. The previous evening Reinhard Werner delivered the 2018 Boole Lecture, entitled *The Simple Argument that Changed the World View of Physics*. The speakers, titles and abstracts for the workshop were as follows:

Reinhard Werner (Leibniz University Hanover, Germany)

An overview of measurement uncertainty

I will review some recent results on measurement uncertainty relations, i.e., quantitative obstructions to the joint measurability of two or more observables, which are complimentary to the usual preparation uncertainties which bar the existence of preparations which are simultaneously sharp for two observables. The basic definition of measurement uncertainty uses transport distance, and Kantorovich duality to turn the problem of determining optimal bounds into

a semidefinite program. For projection-valued observables an alternative definition based on the idea of calibration is available. I then sketch a proof that the preparation uncertainty bounds are lower than the calibration measurement bounds are lower than the measurement uncertainty bounds, but that all these coincide in the case of Fourier-related pairs of observables.

Hans Maassen (Radboud University Nijmegen, Netherlands)

Ergodic behaviour of measurement sequences

We consider a general measurement on a finite quantum system, repeated infinitely often. We show that observation of the asymptotic or ‘macroscopic’ behaviour of the record amounts to a well-defined von Neumann (or “projective”) measurement on the system. The asymptotic behaviour can be viewed as establishing itself in the course of the observation, or as being revealed. This phenomenon was known in the ‘non-demolition’ case and has been named by Fröhlich et al. as ‘the emergence of facts in quantum mechanics’.

Rupert Levene (University College Dublin)

Complexity and capacity bounds for quantum channels

We generalise some graph parameters to non-commutative graphs (a.k.a. operator systems of matrices) and quantum channels. In particular, we introduce the quantum complexity of a non-commutative graph, generalising the minimum semidefinite rank. These parameters give upper bounds on the Shannon zero-error capacity of a quantum channel which can beat the best general upper bound in the literature, namely the quantum Lovász theta number.

This is joint work with Vern Paulsen (Waterloo) and Ivan Todorov (Belfast).

Martin Lindsay (Lancaster University, UK)

Stochastic dilation of minimal quantum dynamical semigroups

In this talk I shall describe a new approach to the realisation of quantum dynamical semigroups as Markov semigroups associated with quantum stochastic flows. Intrinsic limitations of the approach via quantum stochastic differential equations are overcome, by relying upon some holomorphy at the Hilbert space level.

The organisers are very grateful for the support received from the Boole Centre for Research in Informatics, the Irish Mathematical Society, the School of Mathematical Sciences and the Department of Physics.

Report by Stephen Wills, University College, Cork
s.wills@ucc.ie

TOPICS IN FUNCTIONAL ANALYSIS 2018
JULY 9–11, 2018, NUI GALWAY

A three day conference entitled ‘*Topics in Functional Analysis*’ was held in NUI Galway from the 9th to the 11th of July 2018 in celebration of the 65th birthday of Ray Ryan. The meeting attracted participants from Argentina, Brazil, Finland, Germany, Ireland, Japan, Korea, Spain and the USA and featured 18 talks. Topics covered included: mappings between spaces of analytic functions, the Bishop-Phelps theorem, Dirichlet series and geometry of Banach spaces. The speakers and titles were:

Pilar Rueda, *Weighted spaces of Lipschitz functions.*

Luiza Moraes, *On the Continuity of the Composition Operation in $\mathcal{H}_b(E, E)$.*

Barry Turett, *Renormings of classical Banach spaces in metric fixed point theory.*

Yun Sung Choi, *$\sigma_a(D) - \sigma_\mu(D)$ for a general Dirichlet series D .*

Clifford Gilmore, *Dynamics of Derivations.*

Sun Kwang Kim, *The Bishop-Phelps-Bollobas point property.*

Anna Kaminska, *Banach envelopes.*

Tatsuhiko Honda, *Bloch functions on the homogeneous unit ball in a complex Banach space.*

Mikael Lindström, *Volterra operators mapping between Banach spaces of analytic functions.*

Pablo Galindo, *Interpolating sequences for weighted spaces of analytic functions on the unit Ball of a Hilbert space.*

Sean Dineen, *A polynomial miscellany.*

Dirk Werner, *Equivalent norms with an extremely nonlineable set of norm attaining functionals.*

Milena Venkova, *Polynomials on Tree Spaces.*

Han Ju Lee, *On the pointwise Bishop-Phelps-Bollobas property.*

Richard Aron, *Gleason parts on various disc algebras.*

Padraig Kirwan, *20 years of Extendibility of Homogeneous Polynomials.*

Anthony Brown, *Non-homogeneous tensor products and norms of projections between spaces of polynomials.*

Ignacio Zalduendo, *On the measure of polynomials attaining local maxima on a vertex.*

The meeting highlighted the contribution made by Ray to mathematics in Ireland and abroad through his research, exposition and mentoring.

The organizers, C. Boyd, M. Mackey, R. Quinlan and N. Snigireva would like to thank the Irish Mathematical Society for its financial support for this conference.

Report by Christopher Boyd, University College, Cork

christopher.boyd@ucd.ie
