Irish Mathematics Calendar 2018
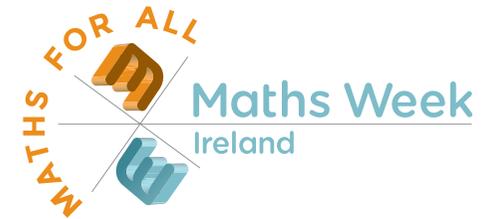
Statistician **John Hooper** (1878-1929) was born 26 January in Cork city. He was educated at UCD, and spent his whole career in the civil service. He became the country's first Director of Statistics in the new state's Department of Industry and Commerce. The Central Statistics Office now awards a medal annually in his honour.

William Bindon Blood (1817-1894) was born on 20 January in Dublin, and was one of the first people to receive a maths degree from TCD. He was professor of engineering at Queen's College, Galway, in the 1850s, where he also pioneered cycling in Ireland. In 1876, he patented the Dublin Tricycle.
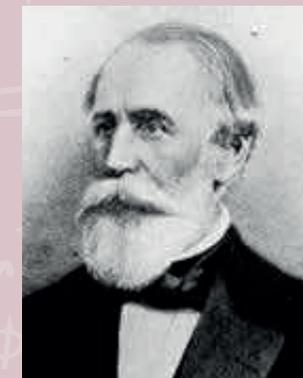
Mathematical physicist **Sheila Tinney** (née Power, 1918-2010) was born on 15 January in Galway, where her father was professor of maths. She was educated at UCD and the University of Edinburgh. Her 1941 PhD (supervised by Max Born) made her the first Irish woman graduate to get a doctorate in the mathematical sciences. She was also one of the first three scholars at the new Dublin Institute of Advanced Studies. She served on the staff at UCD for over a third of a century, rising to the rank of acting head, and she introduced generations of students to quantum physics.

John E. McCarthy was born on 20 January in Parteen, Clare, near Limerick, and was educated at TCD and Berkeley. Most of his career has been spent at Washington University at St. Louis, where he has supervised many PhDs. He is an analyst with interests in operator theory and complex variables, and has written three books.

Barbara Yates (1919-1998) was born on 22 January in Dublin, and grew up in Belfast. Like her father and two brothers before her, she got a maths degree from TCD, having also been a Scholar there. She completed her PhD in differential equations in 1952, making her the first Irish woman graduate to receive a doctorate in pure maths. Her long academic career was mostly spent at Royal Holloway.

Mathematical physicist and chemist **Walter Heitler** (1904-1981) was born on 2 January in Karlsruhe, Germany. He was educated there and in Berlin and Munich. He spent the 1940s at the Dublin Institute for Advanced Studies, and wrote several popular books on quantum physics.

JANUARY 2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 New Year's Day	**2** Irish Mathematics Teacher's Association (IMTA) founded, 1964 Walter Heitler (1904-1981) Bill Wann (1925-2011)	**3**	**4**	**5** John Cosgrove	**6** Edith Anne Stoney (1869-1938)	**7**
8 Ray Flannery (1941-2013)	**9**	**10** BTYSTE	**11** Charlie Daly (1929-2000) BTYSTE	**12** Brian McMaster BTYSTE	**13** Ken Houston BTYSTE	**14**
15 Sheila Power (1918-2010)	**16** Colm O'Muircheartaigh Sean Tobin Annette Pilkington Jerry Murphy	**17** Alfred Robb	**18** William Houston (1871-1953)	**19**	**20** William Bindon Blood (1817-1894) John E. McCarthy	**21**
22 Barbara Yates (1919-1998) Brendan Goldsmith	**23**	**24**	**25** Robert Boyle (1627-1691)	**26** Registration deadline Apps4Gaps Team Maths Regionals John Hooper (1878-1930)	**27**	**28** Des MacHale
29	**30** Coulter McDowell (1932-1993)	**31** David Hobbs				

Maths Week Ireland
MATHS FOR ALL

Theoretical physicist **Petros Florides** was born on 16 February in Lapithos, Cyprus, and was educated at the University of London. After a two-year postdoc at the Dublin Institute of Advanced Studies, he settled at TCD, where he spent over four decades, supervising several theses, and rising to the rank of pro-chancellor.

Siobhan Vernon (née O'Shea, 1932-2002) was born on 24 February in Macroom, Cork, and was educated at UCC, where she taught for over three decades. Her 1964 PhD in mathematical analysis, awarded for previously published work, is believed to be the first doctorate in pure mathematics earned by a woman in Ireland.
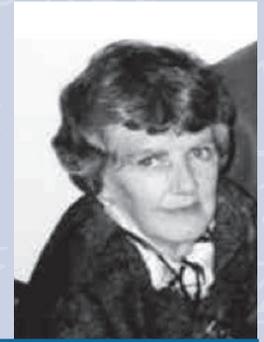
Dave Lewis was born on 21 February in the Isle of Man, and was educated at Liverpool University. His career was spent at UCD, where he supervised numerous theses and wrote two books. His research interests include quadratic and hermitian forms.

Thérèse Dooley was born on 19 February in Dublin, and was educated at St. Patrick's College Drumcondra (SPD), TCD and Cambridge. After teaching at the primary level, she returned to SPD, now part of DCU, working in mathematics education. She has contributed greatly to the MEI conferences, to Research Reports for the NCCA, and, as chair of the local organizing committee, to CERME10.

Kay McNulty (1921-2006) was officially born on 12 February in Creeslough, Donegal, but family circumstances led to her growing up in Philadelphia. She earned a maths degree there in 1942 and went on to become a pioneering computer programmer on the ENIAC. (History remembers Kay under her later married names, as Mauchly and/or Antonelli.)

Mathematical physicist **JR (Jim) McConnell** (1915-1999) was born on 25 February in Dublin, and was educated at UCD and in Rome, where he was ordained as a priest and earned his doctorate from La Sapienza University. His career started at the newly founded Dublin Institute of Advanced Studies, but was mostly spent at St Patrick's College, Maynooth, where he also served as registrar. His books included *Quantum Particle Dynamics* from 1958.

February   2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1	**2** Cornelius Lanczos (1893-1974) Gearóid Granville (1915-2000)	**3**	**4** Terry Maguire Dara Ó Briain
5 Bartholemew Lloyd (1772-1837) Stanley Traynor (1916-1994) Stephen O'Brien (1918-1992)	**6**	**7**	**8** Francis Edgeworth (1845-1926) Stephen Buckley	**9**	**10** Team Maths Final Agnes Mary Clerke (1842-1907)	**11** Vincent Hart Elizabeth Oldham
12 Kay NcNulty (1921-2006) Sean Dineen	**13**	**14** John Perry (1850-1920)	**15** George Stoney (1826-1911) Sophie Wilcock (1850-1922) NI Science Festival	**16** Petros Florides NI Science Festival	**17** Fintan Gallagher NI Science Festival	**18** Arthur Kingston Paddy Dolan NI Science Festival
19 Thérèse Dooley NI Science Festival	**20** John Connolly Joseph Varilly NI Science Festival	**21** David Lewis NI Science Festival	**22** Maeve McCarthy NI Science Festival	**23** NI Science Festival	**24** Gordon Foster (1921-2010) Siobhán O'Shea (1932-2002) John O'Donoghue Engineers Week NI Science Festival	**25** Jim McConnell (1915-1999) Engineers Week NI Science Festival
26 Arthur Donnelly (1885-1973) Engineers Week	**27** John A. Ryan Engineers Week	**28** William Thrift (1870-1942) Engineers Week				

MATHS FOR ALL

Maths Week Ireland

Statistician **Iggy Ó Muircheartaigh** was born on 5 March in Dublin, and was educated at UCD and Glasgow. He spent four decades at UCG/NUIG, culminating in a term as the university's president. He is now active in research on the application of statistics to human rights, economics, and medicine.

Donal Hurley was born on 31 March in Clonakilty, Cork, and was educated at UCC and Yale. Most of his career was spent at UCC, where he co-authored the books *Geometry, Spinors and Applications* and *Topics in Differential Geometry; a New Approach Using D-differentiation* with colleague Michel Vandyck.

Theoretical physicist **Werner Nahm** was born on 21 March in Münster, Germany, and was educated at Munich and Bonn. After a quarter century at CERN, Bonn and UC Davis, he came to DIAS, where he currently serves as director. His work has revealed the symmetries than underlie the different string theories and supergravity theory, and he has authored five books. He is also an expert on the Mayan civilisation and their astronomy, and his linguistics interests have recently seen him study Assyrian chronology.
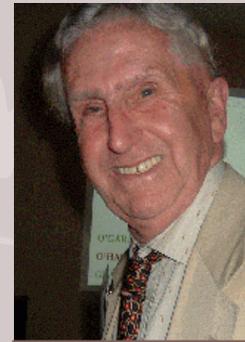
Diarmuid Ó Mathúna was born on 22 March in Cork city, and was educated at UCC and MIT. He has worked at the Courant Institute, Harvard, NASA, the US Department of Transportation and the DIAS. His books include *Mechanics, Boundary Layers and Function Spaces* and *Integrable Systems in Celestial Mechanics.*

Mary Boole (née Everest, 1832-1916) was born on 11 March in Gloucestershire, England, and was brought up there and in France. She eventually married one of her private tutors, George Boole, and resettled in Cork. She helped to edit his landmark 1854 book *An Investigation of The Laws of Thought*, and following her husband's death she moved to London where she taught and published for many decades. She pioneered the use of physical manipulations in the learning of maths, and authored the book *Philosophy and Fun of Algebra* (1909). Her daughter Alicia Boole Stott also made significant contributions to maths.

Hugh Hamilton (1729-1805) was born on 26 March near Balrothery, Dublin, and was educated at TCD, where he later became professor. Euler described his popular 1758 textbook on conic sections De Sectionibus Conicis: Tractatus Geometricus as "the perfect book." His final decades were spent as a clergyman and bishop. He was one of the original members of the Royal Irish Academy.

March

2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1	**2** Gerry Gardner (1926-2009) Nora Ní Chuiv Engineers Week	**3**	**4**
			Engineers Week			
5 Iggy Ó Muircheartaigh	**6** James McNeill (1853-1907)	**7**	**8**	**9** Entry deadline SciFest@College John Forde (1918-2004)	**10** Eugene Gath	**11** Lochlainn O'Raifeartaigh (1933-2000)
12 George Berkeley (1685-1753)	**13** Cyril Delaney (1925-2012)	**14** Tadhg Carey (1919-1995) Mike Fitzpatrick	**15** John Faris (1913-2011) Aisling McCluskey	**16** Aoibhinn Ní Shúilleabháin	**17** St. Patrick's Day Paddy Heelan (1926-2015) Michael P Tuite	**18** Bill Stephens (1913-2001)
19 St Patrick's Holiday	**20** Spring Equinox	**21** Werner Nahm Neil Hallinan	**22** Diarmuid Ó Mathúna	**23** Submission deadline John Hooper Medal Cyril Power (1890-?) John L. Synge (1897-1995)	**24**	**25** Sumertime Begins David Spearman
26 Hugh Hamilton (1729-1805)	**27** Eithne Donnelly (1900-1989) Eva Wills (1925-2010)	**28** John Kennedy (1939-1995)	**29**	**30** Micheál Mac an Airchinnigh	**31** Donal J. Hurley Paul Feehan	

Statistician **Norma Glasgo Reid** was born on 28 April in Limavady, Londonderry, and was educated at Sussex University and Coleraine. She has worked in health services research and nurse education, especially at Coleraine and Coventry, publishing two key books. She later worked in university administration in South Africa.

Astronomer **Annie Maunder** (née Russell, 1868-1947) was born on 14 April in Strabane, Tyrone. In 1889 she was the highest ranked mathematics student at the BA examinations at Girton College, Cambridge, but as a woman was denied a degree. For decades she pursued solar research at Greenwich Royal Observatory, often publishing her findings under her husband's name.

Theoretical physicist **Dermott McCrea** (1934-1993) was born on 25 April in Athlone, Westmeath. He was educated at UCG, Louvain, and the Dublin Institute of Advanced Studies. He also became a Franciscan priest. Most of his career was spent at UCD, where he developed EXCALC, an early computer algebra system for doing calculations in quantum theory and relativity.
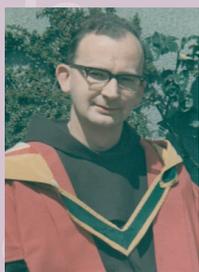
James McMahon (1856-1922) was born on 22 April in Armagh, and first pursued metaphysics and classical studies at TCD. He taught mathematics at Cornell for many decades, serving as chair too. He published extensively in applied maths, and authored three textbooks. He was a founding member of what became the American Mathematical Society, and is believed to be the first Irish person to supervise a doctoral thesis.
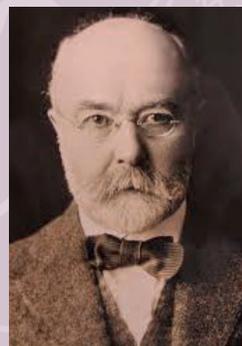
Patrick J. Walsh was born on 9 April in Cobh, Cork, and grew up there and in Belfast. He was educated at QUB, the Pontifical Lateran University in Rome, and Cambridge. He earned two master's degrees in mathematics, the Queen's one for a thesis on group characters. His career included stints as a secondary teacher of maths, the QUB chaplain, the president of St Malachy's, and finally bishop of Down & Connor.
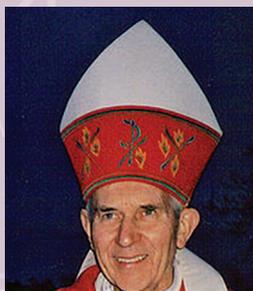
Kevin Hutchinson was born on 26 April in Dublin, and was educated at UCD and Cornell. He has been on the staff at UCD for over a quarter of a century, where he has served as head of department. His research interests include K-theory and linear algebraic groups.

APRIL 2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1 **Easter Sunday**
2 **Easter Monday** Michael Power (1885-1974)	**3** Dionysius Lardner (1793-1859) Richard Townsend (1821-1884)	**4**	**5**	**6** Tom Linehan (1926-2017)	**7** Submission deadline Apps4Gaps	**8** Andrew Graham (1815-1908)
9	**10**	**11** R. C. Geary (1896-1983) G4G Europe Lisbon	**12** G4G Europe Lisbon	**13** Engineers Ireland Conference G4G Europe Lisbon	**14** Irish Mathematical Society (IMS) founded, 1976 Anne Russell (1868-1947) G4G Europe Lisbon	**15** John T. Lewis (1932-2004) G4G Europe Lisbon
16	**17** William Molyneaux (1656-1698) Mark McCartney	**18** George Keating (1902-1973)	**19** John MacFarland (1851-1935) James Cullen (1867-1933) Hugh Alexander (1909-1974)	**20** Philip Boland	**21** William Monck (1839-1915)	**22** James McMahon (1856-1922) Tech Week
23 Thomas Robinson (1792-1882) Tech Week	**24** Norma Glasgo Reid Tech Week	**25** Dermott McCrea (1934-1993) Tech Week	**26** Richard Beatty (1882-1941) Bobbie Elliott (1924-2006) Kevin Hutchinson Tech Week	**27** Winners announced John Hooper Medal Tech Week	**28** John Toland Tech Week	**29** Cormac Smith (1926-2009)
30 Sally McClean						

James R. (Dick) Timoney (1909-1985) born on 17 May in Belleek, Fermanagh. He was educated at UCD, and studied with E. T. Whittaker at the University of Edinburgh, before working for almost half a century on the staff at UCD, including serving as department head. TCD's Richard Timoney is his son.

Dana Mackey (née Nicolau) was born on 6 May in Bucharest, Romania. She was educated at the University of Bucharest and UCD. Her career has been spent at Dublin Institute of Technology. From a beginning in fluid dynamics, her research interests now span a broad range of modelling in applied mathematics, especially photo-chemical and biochemical effects.

Statistician **Helen Purtill** (née Mac Mullen) was born on 26 May in Killybegs, Donegal, and was educated at DCU and at Sheffield Hallam. She has long been based at the University of Limerick, where she is actively involved in interdisciplinary research with numerous collaborators.

John Gaston Leathem (1871-1923) was born on 5 May in Belfast and was educated at QUB and Cambridge, working at the latter for over a quarter of a century. He wrote four books, in one of which (*Volume and Surface Integrals Used in Physics*, 1905) he introduced the now standard arrow notation for limits. His colleague G. H. Hardy enthusiastically embraced and promoted this innovation.

Finbarr Holland was born on 12 May in Cork city, and was educated at UCC and at Cardiff. A classical analyst, his career has been spent at UCC, where he has supervised several theses. He was the founding president of the Irish Mathematical Society in 1977, and led the first Irish team to compete at an International Mathematics Olympiad in 1988. He is still active in the Cork Mathematical Enrichment Programme for secondary school students, which he initiated thirty years ago.

Robin Harte was born on 5 May in Belfast, and was educated at TCD and Cambridge. After five years at Swansea, he spent two decades at UCC. The last quarter century has seen him pursue life and research in an itinerant fashion, in various parts of the world. Along the way he has authored two books on functional analysis.

MAY 2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1	2 William McFadden Orr (1866-1934)	3 Society of Actuaries in Ireland founded, 1972	4 Johnny Burns	5 W. R. W. Roberts (1850-1935) John Leathem (1871-1923) Mervyn Ellison (1909-1963)	6 Dana Mackey
7 May Bank Holiday	8 Thomas Strain (1878-1949) Trevor West (1938-2012)	9	10	11 Entry deadline SciFest@Northwest Martin Mathieu	12 John Casey (1820-1891) Finbarr Holland Fran Barry (1939-2008)	13 Arthur Panton (1843-1906) Marjorie Paterson-Smyth (1889-1975) Leo Creedon
14	15 Alice Everett (1865-1949)	16 Jack Todd (1911-2007)	17 J. R. (Dick) Timoney (1909-1985) Shane Dowdall	18	19 Brendan Scaife	20
21 Trevor Weekes (1940-2014)	22 A. C. Dixon (1865-1936) Stan Broderick (1893-1962)	23 Thomas Preston (1860-1900 James Caldwell Adrian Dunne	24	25 Apps4Gaps Announcement Gar de Barra	26 Helen Purtill	27 John Campbell (1862-1924)
28 Bank Holiday (NI) George Minchin (1845-1914) Robert William Genese (1848-1922) Seoirse Mac Niocaill (1881-1968)	29 Mary Brück (1925-2008)	30	31			

Maths FOR ALL
Maths Week Ireland

Theoretical physicist **Derrick Crothers** was born on 24 June in Londonderry, and grew up in Cookstown, Tyrone. He was educated at Oxford and QUB. He taught for over four decades at QUB where he supervised over thirty PhD students and wrote three books.

Applied mathematician **Sarah Mitchell** was born on 14 June in Bristol, England. Her education was entirely at the University of Bath, and she worked at British Columbia and Cape Town before settling at the University of Limerick, where she is currently department head. Her interests are in numerical and mathematical modelling of moving boundary problems relevant to solidification, melting and polymer diffusion.

Applied mathematician **Miguel Bustamante** was born on 4 June in Santiago, Chile. He was educated at the University of Chile and worked in Paris and Warwick before settling at UCD. His research interests are largely focussed on turbulence in fluids (and general nonlinear systems) and nonlinear energy-transfer mechanisms in wave systems.

Ralph Henstock (1923-2007) was born on 2 June in Nottinghamshire, England, and was educated at Cambridge and Birkbeck College. He worked both at QUB and at Coleraine, supervising several doctorates, as well as at Bristol and Lancaster. His legacy includes an alternative approach to integration, and three books on that topic.
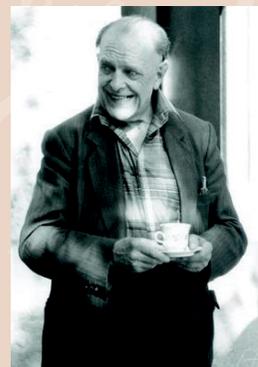
Alexei Pokrovskii (1948-2010) was born on 2 June in Voronezh, Russia, and was educated at Voronezh State University and the Institute for Control Problems, Moscow. He worked in Moscow and Australia before settling at UCC in 1997, where he soon became department head. His research was broad, and he was a pioneer in the mathematical theory of systems with hysteresis.

Cora Stack was born on 22 June in Tralee, Kerry. She was educated at UCG, UCD and the University of Reading. An algebraist by training, she has taught for over two decades at the Institute of Technology Tallaght. Her interests include nilpotent algebras over fields of prime characteristic.

JUNE 2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1 Edmund Robertson	**2** William Coates (1857-1912) Ralph Henstock (1923-2007) Alexei Pokrovskii (1948-2010)	**3** Jim Callagy (1908-1988) Murrogh Golden
4 Bank Holiday (ROI) Donal McCarthy (1908-1980) Rod Gow Miguel Bustamante	**5**	**6**	**7**	**8** Alicia Boole (1860-1940) George Hughes (1918-1994)	**9** Muriel Wales (1913-2009)	**10** John Semple (1904-1985)
11	**12** Margaret McDonald (1906-1989)	**13** William Gossett (1876-1937)	**14** Thomas McLaughlin (1896-1971) Sarah Mitchell	**15**	**16**	**17** Terence Gorman (1923-2003)
18	**19** Dublin Institute for Advanced Studies Act signed, 1940 Maurice Aaron Jaswon (1922-2011) Peter Lynch	**20** Dave Cochran (1940-2013)	**21** Summer Solstice Fiacre Ó Cairbre Robert Boyle Summer School	**22** Luke Drury Cora Stack Robert Boyle Summer School	**23** Robert Boyle Summer School	**24** James J. Smith (1892-1983) Derek Crothers Robert Boyle Summer School
25 Samuel Verblunsky (1906-1996) Susan Lazarus	**26** William Thomson (1824-1907) Victor Meally (1911-1986)	**27** Morgan Crofton (1826-1915)	**28**	**29** Phelim Boyle	**30**	

Mathematical physicist **John Stewart Bell** (1928-1990) was born on 28 Jul in Belfast. He was educated at QUB and Birmingham, and spent much of his career at CERN. He is known for Bell's Theorem which says that no physical theory of local hidden variable can reproduce all of the predictions in quantum mechanics.
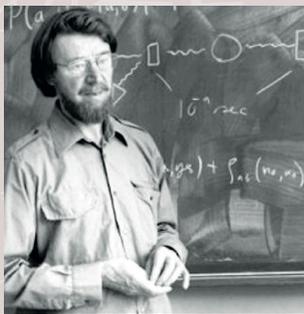
Richard Watson was born on 26 July in Portadown, Armagh, and was educated at Maynooth, Warwick and Swansea. He taught at Maynooth for 35 years—earning his doctorate on along the way—and also served as dean there. He co-authored *Maynooth Mathematical Olympiad Manual* and *A Resource for Transition Year Mathematics Teachers.*
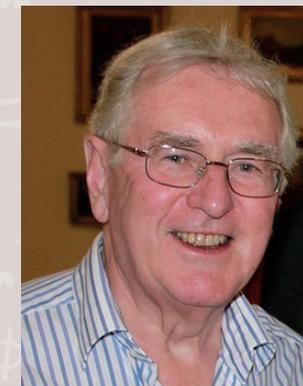
John Kells Ingram (1823-1907) was born on 7 July in Templecarne, Pettigo, Donegal, and was brought up there and in Newry. He was educated at TCD, and had a long and varied career there, rising to the rank of vice provost. He has been co-credited with introducing the geometric concept of inversion in a circle. He is remembered today as an economist and as a poet; indeed, he penned "The Memory of the Dead" (aka "Who Fears to Speak of '98"). Also, as the librarian at TCD, it was he who first had the Book of Kells put on public display.

Sandra Collins was born on 16 July in Dublin, and was educated at UCD. The first part of her career, arising from her doctorate in fluid dynamics, saw her work at DCU, Ericsson and SFI. She then became director of the Digital Repository of Ireland in the Royal Irish Academy, and is currently the director of the National Library.

Áine Ní Shé was born on 21 July in Cork city, and was educated at Limerick and UCC. After teaching at primary level for ten years, she did her doctorate in algebra and settled at CIT where she has served as head of department, and is currently acting registrar and vice president for academic affairs.

Paddy Kennedy (1929-1966) was born on 20 July in Claremorris, Clare, and was educated at UCC and the University of Exeter. After a decade teaching at UCC during which he published extensively in analysis, he became the first professor of mathematics at the new University of York. Sadly, he died a few years later.

JULY   2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1 Robert Ball (1840-1913)
2 Ross Geoghegan	**3** Desmond McConnell John Kinsella IMO Romania	**4** Edgar Harper (1880-1916) IMO Romania	**5** Arthur Lai Fook (1919-2013) IMO Romania	**6** Tony Hollingsworth (1943-2007) Ciarán Mac an Bhaird IMO Romania	**7** John Kells Ingram (1823-1907) J. P. McCarthy IMO Romania	**8** IMO Romania
9 IMO Romania	**10** IMO Romania	**11** Joseph Larmor (1857-1942) IMO Romania	**12** **Battle of Boyne (NI)** IMO Romania	**13** IMO Romania	**14** Ivan Todorov IMO Romania	**15**
16 Marjorie J. Long (1886-?)	**17** William Donald Davison (1937-2013) Richard M. Timoney	**18**	**19**	**20** Paddy Kennedy (1929-1966) Brendan O'Sullivan	**21** Áine Ní Shé	**22** George Kelly (1927-2009) Eugene Benilov Adrian Raftery
23	**24**	**25** Robert Goodbody (1850-1911 Daniel J. O'Connell (1896-1982 John G. Byrne (1933-2016)	**26** Richard Watson	**27** Richard Ingram (1916-1967) Michael Murtagh (1943-2001)	**28** Carew Meredith (1904-1976) John Stewart Bell (1928-1990)	**29** Sean Close Sinead Breen
30 Martin J. Newell (1910-1985) Sara McMurry	**31** Oliver Byrne (1810-1880)					

MATHS FOR ALL
Maths Week Ireland

James Booth (1806-1878) was born on 26 August in Lavagh, Leitrim, and was educated at TCD, where he taught for a while. He also taught at Bristol and Liverpool. He published extensively, on topics ranging from tangential coordinates and reciprocal polars, to elliptic integrals and conic sections.

Michael A. Hayes (1936-2017) was born on 2 August in Kilfinane, Limerick. He grew up there and in Limerick city, and was educated at UCG and at Brown. After some years at the University of East Anglia, he became head of mathematical physics at UCD, where he worked for a quarter of a century. His research was inelasticity theory and the kinematics of deformation. He co-authored the book *Bivectors and Waves in Mechanics and Optics.* NUIG has recently established a prize in continuum mechanics in his memory.
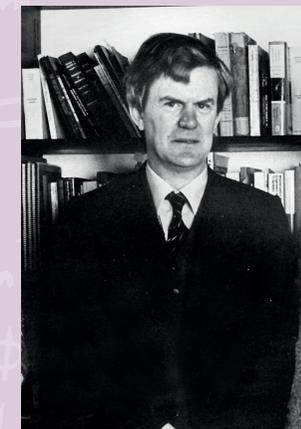
Pauline Mellon was born on 2 August in Avoca, Wicklow, and was educated at UCD, where she has spent most of her career. Her research interests straddle complex analysis, functional analysis and differential geometry: she studies manifolds with symmetry. She is currently vice president of the IMS.

Mathematical physicist **George Stokes** (1819-1903) was born on13 August in Skreen, Sligo. His education and entire professional life was at Cambridge. His legacy includes Stokes' theorem in multivariable calculus and the Navier-Stokes equations in fluid dynamics.

William Rowan Hamilton (1805-1865) was officially born 4 August in Dublin—he himself celebrated his birthday a day earlier—and is Ireland's most renowned mathematician and mathematical physicist. He was educated and spent most of his career at TCD. His extensive legacy includes innovations in algebra, mechanics and optics. He is most well known for quaternions, a non-commutative algebraic system.
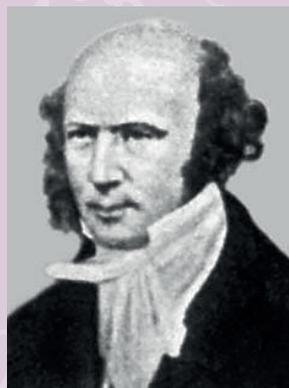
Michael Mackey was born on 12 August in Dublin, and was educated entirely at UCD, where he has also spent his career so far. His main interest is in Jordan structures, especially JB*-triples, which blends elements of functional analysis, complex analysis, non-associative algebras and calculus of manifolds. He recently served as president of the IMS.

AUGUST

2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2 Michael A. Hayes (1935-2017 Pauline Mellon	3 George Fitzgerald (1851-1901)	4 William Rowan Hamilton (1805-1865) Francis Murnaghan (1893-1976)	5 Annraoi de Paor Joe McKenna
6 Bank Holiday (ROI)	7 William Monypeny (1866-1912)	8 Annraoi de Paor	9	10 Charlie Rogers	11 William Eakin (1912-1983) Lionel Lovitch John Miller	12 Erwin Schrödinger (1887-1961) Vincent Guerrini (1912-2000) Michael Mackey
13 George Stokes (1819-1903)	14	15	16 Felix Hackett (1882-1970)	17	18	19
20	21 Samuel Scott (1913-1980)	22 Philip Gormley (1910-1973) Natalia Kopteva	23	24	25	26 James Booth (1860-1878) Thomas Lyle (1860-1944)
27 Bank Holiday (NI)	28	29 John Herivel (1918-2011) Dáibhí Ó Cróinín	30	31		

Maths For All
Maths Week Ireland

George Salmon (1819-1904) was born on 25 September in Dublin, and grew up in Cork. He studied at TCD where he also spent his career, writing numerous popular and influential books on higher level algebra and geometry, some of which appeared in French, German and Italian translation.

Mathematical physicist **Joseph Spelman** (1932-2016) was born on 2 September in Ballaghaderreen, Roscommon, and was educated at Maynooth. He also studied at the Dublin Institute of Advanced Studies and at Stanford. After lecturing for over two decades at Maynooth he moved to Sligo to work fulltime as a priest until his retirement.
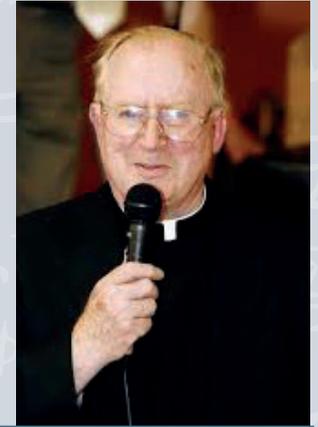
Mary Sybil Raymond (1864-1926) was born on 14 September near Blennerville, Kerry. Her Girton College successes in mathematics in the 1880s were not rewarded with a university degree for three decades, due to Cambridge rules of the period. TCD eventually conferred her when she was in her fifties. In the meantime, she taught at schools in Britain and Australia.
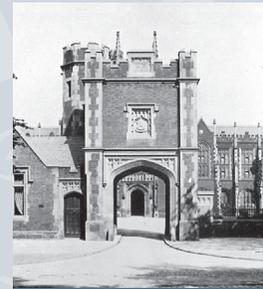
Sara Eveline Tomlinson (1900-1970) was born on 14 September in Belfast and was educated at QUB. Her master's thesis was on the dynamics of a spinning top. Her career was spent lecturing and teaching, in Belfast, India and South Africa.

George Allman (1924-1904) was born on 28 September in Dublin, and was educated at TCD. He taught at Queen's College, Galway, for four decades, publishing the well-regarded book Greek Geometry from Thales to Euclid. He made numerous contributions to the ninth edition of the Encyclopaedia Britannica.
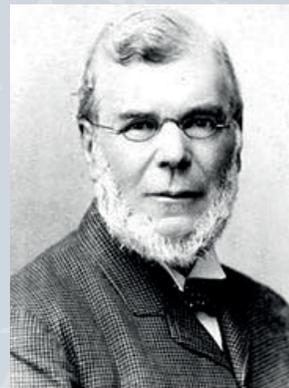
Martin L. Newell (son of mathematician Martin J. Newell) was born on 16 September in Galway city, and was educated at UCG and Frankfurt. He first taught at Queen Mary in London before returning to UCG/NUIG for 35 years. He has edited two conference proceedings on group theory. His own son Johnny is also a mathematician.

SEPTEMBER 2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1 Mary Mulvihill (1959-2015)	**2** Joseph Spelman (1932-2016)
3	**4** Annie McElderry (1874-1968)	**5**	**6**	**7**	**8**	**9**
10 Edward Stringer (1919-1956)	**11** Jack McConnell (1945-2013)	**12**	**13** Patricia Eaton	**14** Eveline Tomlinson (1900-1970)	**15**	**16** Henry Biggs (1882-1934) Martin L. Newell
17	**18** Swift Johnson (1857-1918)	**19**	**20**	**21** Tom Carroll	**22** Autumn Equinox Ted Hurley	**23**
24	**25** George Salmon (1819-1904)	**26**	**27** Patrick d'Arcy (1725 - 1779)	**28** George Allman (1824 - 1904)	**29** Anca Mustata	**30** Robert Adrain (1775-1843)

Mathematical educator **Olivia Fitzmaurice** (née Gill) was born on 19 October in Kilnaleck, Cavan and was educated at Limerick and Maynooth. After some secondary teaching, she returned to the University of Limerick on the staff. The areas of her research include adult learners of mathematics, service mathematics, the Irish Mathematics Learning Support Network (IMLSN) and mathematics in initial teacher education.

Dane Flannery was born on 6 October in Kuala Lumpur, Malaysia, and grew up in various parts of Australia, especially Canberra. He was educated at the National University of Australia. He has been on the staff at UCG/NUIG for two decades, where he has supervised several doctoral theses. His interests include linear matrix groups and combinatorial designs.

Applied mathematician **Frank Hodnett** (1939-2011) was born 15 October in Bantry, Cork, and was educated at UCC and at Leeds. Upon completing his PhD on fluid mechanics he spent a few years at the University of Connecticut. He then worked at NIHE Limerick (which became the University of Limerick) for three decades, serving as department head. He supervised several theses and edited two conference proceedings.

Margaret Knox (later Holmes, 1913 to at least 1958) was born on 13 October in Belfast. She was educated at QUB, doing her master's thesis (with Jack Semple) on limiting envelopes of curves and surfaces. She later lived in Sheffield and Melbourne.

Statistician **T. Brendan Murphy** was born on 8 October in High Wycombe, England and brought up in Carrigrohane, Cork. He was educated at UCC and Yale. His career so far has been spent at TCD and UCD, and he has supervised numerous PhDs. His research interests include computational statistics, mixture models and cluster analysis.

Maths education expert **Brian Greer** was born on 25 October in Strabane, Tyrone. He was educated at Cambridge and QUB, his graduate degrees being in educational psychology. He taught for three decades at QUB, then at San Diego State University. He is a veteran crossword puzzle creator, whom some know as "Brendan of the Guardian". His puzzles have also appeared under the names Virgilius and Jed.

OCTOBER 2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 Alfred O'Rahilly (1884-1969 Stefan Hutzler	**2** Arthur Conway (1875-1950)	**3** Maurice O'Reilly	**4** Mark Walsh Joe Travers	**5** Iulian Mac Airt (1938-2012)	**6** Ernest Walton (1903-1995)	**7**
8 Patrick Wayman (1927-1998) Dane Flannery T. Brendan Murphy	**9**	**10**	**11**	**12**	**13** John G. Smith (1881-1968) Pádraig de Brún (1889-1960) Ernan McMullin (1924-2011) Maths Week	**14** Éamon de Valera (1882-1975 Eabhnat Ní Fhloinn Maths Week
15 Munster Maths and Science Family Fair Frank Hodnett (1939-2011) Maths Week	**16** Hamilton Walk RIA Hamilton Lecture Philip Kumar Maini Maths Week	**17** Denis Weaire Maths Week	**18** Maths Week	**19** Olivia Fitzmaurice Maths Week	**20** Maths Week	**21** IMTA MathsFest & AGM D61UCC Celebration of Mind Martin Gardner (1914-2010) Maths Week
22	**23** Percy McCormack (1929-2015)	**24**	**25** Brian Greer	**26**	**27**	**28** **Summertime Ends** Derek McNally
29 **Hallowe'en Bank Holiday (ROI)** Garfield Woods (1906-1973)	**30**	**31**				

Maths for all
Maths Week Ireland

Applied mathematician **Michel Destrade** was born on 23 November in Bordeaux, France. He was educated at École Normale Supérieure de Cachan (now Paris-Saclay) and at UCD. His career has included stints at Paris VI and UCD before he settled at NUIG, where he now serves as chair of applied maths. He has supervised several theses in Ireland, and his interests are in biomechanics, with a goal of modelling, describing and predicting the mechanical behaviour of gels and soft tissues.

Mathematician and logician **George Boole** (1815-1864) was born on 2 November in Lincoln. Despite being largely self-taught, in 1849 he secured a job as Professor of mathematics at Queen's College, Cork. His legacy includes Boolean algebra, which laid the foundations of the information age. His wife Mary Everest Boole and their daughter Alicia also made contributions to mathematics.
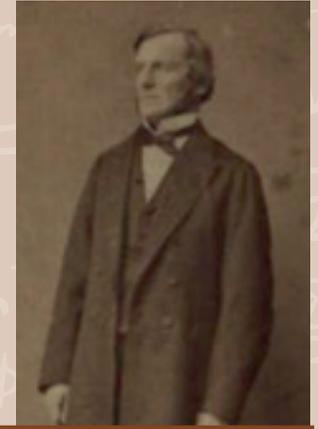
Mathematical physicist **Bob Critchley** (1948-2007) was born on 8 November in London and was educated at Oxford and DIAS. His doctorate was completed in Dublin, where he also did a postdoc. After a few years, Bob settled at NIHE Limerick (later the University of Limerick) where he worked for three decades. He was active in Computer Aided Learning for many years, and also in the Open University.

Joseph Galbraith (1818-1890) was born on 29 November in Dublin, and was educated at TCD, where he worked for three decades, rising to the rank of registrar. He co-authored 10 popular textbooks with his colleague Samuel Haughton, leading to the assessment that the pair "educated a generation of Irishmen in technical issues that would make them skilled and employable."

Applied mathematician **Matt McCarthy** (1938-2017) was born on 19 November in Cork city, and was educated at UCC and Nottingham. His four-decade career was based at UCG, where he also served as dean of science and, registrar. His research interests included continuum mechanics, dialectrics, and wave propagation.

Albert J. McConnell (1903-1993) was born on 19 November in Ballymena, Antrim, and was educated at TCD and at La Sapienza University in Rome. He spent his entire career at TCD, serving as provost, and wrote two books, one on Riemannian geometry and tensor calculus.

NOVEMBER 2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1	2 George Boole (1815-1864) Henry Smith (1826-1883) Anthony Traill (1838-1914)	3	4
5 David Alexander	6 Charles Graves (1812-1899)	7	8 Bram Stoker (1847-1912) Bob Critchley (1948-2007)	9 Fred Klotz (1943-1988) Gordon Lessells	10 Science Week (ROI)	11 **Rememberence Sunday** Charles MacGarry (1877-1936) Jim O'Reilly (1916-1978) Science Week (ROI)
12 Gerard Murphy (1948-2006) Science Week (ROI)	13 James Thomson (1786-1849) Science Week (ROI)	14 Science Week (ROI)	15 Science Week (ROI)	16 Stanley Lyon (1882-1975) Catherine Comiskey Science Week (ROI)	17 Science Week (ROI)	18 Barry Spain (1914-2007) David Bates (1916-1994) Science Week (ROI)
19 A. J. McConnell (1903-1993) Matt McCarthy (1938-2017)	20	21	22 Michele Destrade	23	24	25 Irish Applied Maths Teachers Association (IAMTA), founded 2006
26	27	28	29 Joseph Galbraith (1818-1890) Colm Barry (1906-1976) Brendan Steen (1921-2015)	30		

Maths Week Ireland

Mathematician and astronomer **Bill McCrea** (1904-1999) was born on 13 December in Dublin, and was educated at Cambridge. His career, which included a stint at QUB, was mostly spent at Royal Holloway College. He discovered that the sun is largely made of hydrogen and helium.

Sketch courtesy of Dr Jonathan Hare, Sussex University.

Samuel Haughton (1821–1897) was born on 21 December in Carlow. He studied maths at TCD, where he later taught for over 35 years, for much of that as professor of geology. His mathematical work was extensive, and he also qualified as a medical doctor. The 10 textbooks he co-authored with TCD colleague Joseph Galbraith are credited with educating "a generation of Irishmen in technical issues that would make them skilled and employable."

Eoghan McKenna (1891-1967) was born on 13 December in Millstreet, Cork. After earning his BSc and MSc from UCC, he taught in schools in Ireland and Glasgow and at the Municipal College of Technology (Belfast). He then moved to UCG, where he lectured on mathematical physics through Irish for over three decades. Actress Siobhan McKenna, who studied maths in her early days at UCG, was his daughter.

Applied mathematician **Paddy Quinlan** (1919-2001) was born on 7 December in Ballincrana, Kilmallock, Limerick, and was educated at UCC—first in civil engineering and then in maths science—and at Caltech. He lectured at UCC for four decades, supervising numerous theses there. He specialised in applying the theory of elasticity and mathematical techniques such as Fourier integrals to engineering problems. He also served as a member of Seanad Éireann, from 1957 to 1977.

David Callan was born on 27 December in Dublin, and was educated at UCD and Notre Dame. His career has been spent at Lafayette College, the University of Bridgeport, and the University of Wisconsin at Madison. His research interests include combinatorics and statistics.

Anthony Cronin was born on 16 December in Rathangan, Kildare, and was educated at NUIG and UCD. He now works at UCD, pursuing dual interests in matrix theory and mathematics education. He is deeply involved with the Irish Mathematics Learning Support Network.

DECEMBER 2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1 Raymond Flood	**2**
3 John Donaghey (1878-1949) Jim Flavin (1936-2012)	**4** John Graves (1806-1870)	**5** Tom Laffey	**6**	**7** Paddy Quinlan (1919-2001) Benjamin Moiseiwitsch (1927-2016) Peter McPolin	**8** Mike Carroll (1936-2016)	**9**
10	**11** Allan Isaac (1936-2013) David Madigan	**12**	**13** Eoghan McKenna (1891-1967) Bill McCrea (1904-1999) James Taylor	**14**	**15**	**16** Andrew Young (1919-1992) Anthony Cronin
17 Maurice Kennedy (1924-1994)	**18** Eleanor Moss (1864-?)	**19**	**20** William Snow Burnside (1839-1920)	**21** Winter Solstice Samuel Haughton (1821-1897)	**22** John Harding (1911-1985?)	**23**
24 Harry Thrift (1882-1958)	**25** Christmas Day Patrick Dineen (1840 - 1934) John Malet (1847-1901) Tom Sherry	**26** Boxing Day/ St. Stephen's Day	**27** David Callan	**28**	**29** Hugh Holohan (1892-1957)	**30**
31 New Year's Eve						

Mathematics worldwide grew in part from a natural human desire to understand the heavens and the physical world around us, as well as the procession of seasons. The people who built **Newgrange** over 5000 years ago certainly had admirable computational skills which remain mysterious to us today. In medieval times Irish monks played a key role in **Computus**, studies concerning the calculation of the date of Easter. In more recent centuries, observatories at **Dunsink, Armagh and Birr** have allowed amateurs and professional astronomers alike to observe and test out mathematical theories, and the schools of Theoretical and Cosmic Physics at the **Dublin Institute of Advanced Studies** continue that tradition at a much more advanced level. TCD, founded in 1592, formed the first modern university in Ireland. St Patrick' College Maynooth (now **Maynooth University**) was founded in 1795. The 1840s saw the arrivals of what we now know as **QUB, NUIG, and UCC**. By the end of the 19th century **UCD** was well established.

Boyle's law (1662) is the quintessential mathematical equation about physical quantities, predating Newton's famous laws by over 20 years. Bishop and philosopher George **Berkeley**—after whom a city and a university in California are named—published his critique of calculus in 1734. Patrick d'Arcy wrote about what is now known as **angular momentum** in 1746. Robert Adrain published **the method of least squares** in 1808.

William Rowan Hamilton was a man who excelled equally in maths and physics. His extraordinarily diverse contributions include the **Hamiltonion** (1833), **Icosian game** and **Hamiltonian paths** (1856), and **Quaternions** (1843). The last listed 4-dimensional algebraic discovery was followed within a month or two by an 8-dimensional generalisation (due to John Graves) named **octonions**. Hamilton's name also lives on in linear algebra in the celebrated **Hamilton-Cayley theorem.**

Inversion in a circle was introduced by John Stubbs and John Ingram from TCD circa 1842. In the 1840s, James MacCullagh (also at TCD) introduced what we think of today as the **curl** of a vector field. Noted physicist, mathematician and engineer Willliam Thomson (later known as Lord Kelvin) introduced what we now know as the **Kelvin scale** (for temperature) in 1848. Thomson also contributed to the standard **Stokes theorem** (1850ish) from multivariable calculus, named after a Sligo man also remembered in the **Navier~Stokes~equations** (1840s).

In the 1850s, the first professor of maths in Cork solidified the ideas which now form the basis for the digital age, via **Boolean algebra, Boolean logic, Boolean values** and **Boolean operations**. In the early 1900s, his daughter Alicia Stott coined the term **polytope** for polyhedra in higher dimensions.

The **Smith normal form** of a matrix was introduced in 1861. **Casey's theorem** (1866) for circles is a kind of generalized Ptolemy's theorem. **Screw theory** (1876), a useful theory in rigid dynamics, is due to Robert Ball. **Edgeworth series** (1880s) approximates a probability distribution in terms of its cumulants. **Lorentz-Fitzgerald contraction** (1889) concerns the shortening of an object (relative to an observer) along the direction of its motion.

The **Baker-Campbell-Hausdorff-formula** in Lie algebras has its origins in 1897. The now-standard **arrow notation** for limits was introduced in a 1905 book by John Leathem, and soon enthusiastically embraced and promoted by Hardy. **Cullen numbers** also date from 1905. The **student t-test** was published in 1908 in connection with small samples at Dublin's Guinness brewery,

The **Geary-Khamis dollar** is a hypothetical unit of currency first proposed by statistician R. C. Geary in 1958. What is remembered as the **Henstock-Kurzweil integral** was developed in part in the 1960s in Belfast by the first named mathematician. **Bell's theorem** (1964) and **O'Raifeartaigh's no-go theorem** (mid 1960s) concern physically impossible situations in the context of quantum mechanics. In 1993, the **Weaire-Phelan~structure** improved on a long-believed conjecture of William Thomson (aka Lord Kelvin) on the packing of 3D space with cells of equal volume.

Today, each October, 300,000+ young people island-wide engage in the world's largest maths outreach programme: **Maths Week.** On 16th October enthusiasts from all over the globe participate on the **Hamilton Walk** along the Royal Canal in Dublin to commemorate the discovery of quarternions. Irish Times readers (anywhere on the planet, via the internet) are regularly treated to Peter Lynch's award-winning That's Maths column and its associated book and blog. The **Annals of Irish Maths and Mathematicians** documents over 3,500 people and 800 books with an Irish maths connection. It too blogs regularly.

Maths Week
QUB
That's Maths
Armagh
Cullen numbers
Kelvin scale
Stokes' theorem
UCD
Casey's theorem
Boyle's law
Computus
Method of least squares
Hamiltonian path
Hamilton walk
Dunsink
Inversion in a circle
Newgrange Weaire~Phelan structure
Student t-test
Boolean operation
NUIG Henstock-Kurzweil integral Birr
Baker-Campbell-Hausdorff formula Curl
Annals of Irish Maths & Mathematicians
Edgeworth series
Lorentz-FitzGerald contraction
Octonions
O'Raifeartaigh's no-go theorem
Arrow notation for limits
Boolean logic
Smith normal form
Navier-Stokes equations
Polytope
Hamilton-Cayley theorem UCC
Bell's theorem
Angular momentum
Geary-Khamis dollar
Screw theory
Icosian game
Berkeley
Boolean algebra
DIAS
Boolean value
MU
TCD
Quaternions
Hamiltonian

JANUARY   2019

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1 New Year's Day	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Maths Week Ireland
MATHS FOR ALL

This calendar is a product of a wider project to celebrate Irish Mathematics and Mathematicians both historic and modern: illustrating the proud historical and strong contemporary contribution to the world of mathematics and consequently to the world at large. The project includes the Annals of Irish Mathematics, the Atlas of Irish Mathematics and Library of Irish Mathematics and monthly blogs of relevance..

The project can be found on **www.mathsireland.ie** and followed on twitter **@IrishMathsFacts.**

Maths Week Ireland was established in 2006 to promote mathematics and its applications across the island of Ireland. It is coordinated by Calmast STEM Outreach Centre at Waterford Institute of Technology. Taking place every October in the week including the 16th, Hamilton Day, it has grown to be the biggest festival of its kind in the world with over 300,000 participating in 2017. It is a partnership of universities, institutes of technology, teacher training colleges, professional bodies, visitor centres and other groups concerned with mathematics.

More information can be found at **www.mathsweek.ie** or follow on twitter **@mathsweek**