

Recent Publications – Faculty of Engineering, Mathematics and Science

BY MEMBERS OF THE STAFF AND BY RESEARCH STUDENTS WORKING UNDER THEIR SUPERVISION

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School of Biochemistry and Immunology

BIOCHEMISTRY

- Caffrey, Martin**, 'In meso *in situ* serial X-ray crystallography of soluble and membrane proteins', *Acta Crystallographica Section D*, 71 (2015), 1238-1256 [C.Y. Huang, V. Olieric, P. Ma, E. Panepucci, K. Diederichs, M. Wang and M. Caffrey]
- 'Fast native-SAD phasing for routine macromolecular structure determination', *Nature Methods*, 12 (2015), 131-133 [T. Weinert, V. Olieric, S. Waltersperger *et al*]
- 'MemProtMD: automated insertion of membrane protein structures into explicit lipid membranes', *Structure*, 23, 7 (2015), 1350-1361 [P.J. Stansfeld, J.E. Goose, M. Caffrey, E.P. Carpenter, J.L. Parker, S. Newstead and M.S.P. Sansom]
- 'Crystal structure of rhodopsin bound to arrestin by femtosecond X-ray laser', *Nature*, 523, 7562 (2015), 561-567 [Y. Kang, X.E. Zhou, X. Gao *et al*]
- 'Gating topology of the proton-coupled oligopeptide symporters', *Structure*, 23, 2 (2015), 290-301 [P.W. Fowler, M. Orwick-Rydmark, S. Radestock *et al*]
- Creagh, Emma**, 'Altered expression of caspases-4 and -5 during inflammatory bowel disease and colorectal cancer - novel diagnostic and therapeutic potential', *Clinical and Experimental Immunology*, 181, 1 (2015), 39-50 [B. Flood, K. Oficjalska, D. Laukens *et al*]
- Cunningham, Colm**, 'DNA sensors are expressed in astrocytes and microglia *in vitro* and are upregulated during gliosis in neurodegenerative disease', *GLIA*, 63, 5 (2015), 812-825 [D.J. Cox, R.H. Field, D.G. Williams, M. Baran, A.G. Bowie, C. Cunningham and A. Dunne]
- 'Interdependent and independent roles of type I interferons and IL-6 in innate immune, neuroinflammatory and sickness behaviour responses to systemic poly I: C', *Brain, Behavior, and Immunity*, 48 (2015), 274-286 [C. Murray, E.W. Griffin, E. O'Loughlin, (...), A. Harkin and C. Cunningham]
- 'Astrocytes are primed by chronic neurodegeneration to produce exaggerated chemokine and cell infiltration responses to acute stimulation with the cytokines IL-1 β and TNF- α ', *Journal of Neuroscience*, 35, 22 (2015), 8411-8422 [E. Hennessy, E. Griffin and C. Cunningham]
- 'At the centre of neuronal, synaptic and axonal pathology in murine prion disease: degeneration of neuroanatomically linked thalamic and brainstem nuclei', *Neuropathology and Applied Neurobiology*, 41, 6 (2015), 780-797 [R. Reis, E. Hennessy, C. Murray, E.W. Griffin and C. Cunningham]
- Curtis, Annie**, 'Circadian control of innate immunity in macrophages by miR-155 targeting Bmal1', *PNAS*, 112, 23 (2015), 7231-6 [A.M. Curtis, C.T. Fagundes, G. Yang *et al*]
- 'Understanding the role of cellular molecular clocks in controlling the innate immune response', *Methods in Molecular Biology*, 1390 (2016), 301-16 [A.M. Curtis and C.T. Fagundes]

Recent publications – Faculty of Engineering, Mathematics and Science

- Fayne, Darren**, 'Differential interactions of antiretroviral agents with LXR, ER and GR nuclear receptors: potential contributing factors to adverse events', *British Journal of Pharmacology*, 171, 2 (2014), 480-97 [J. Svård, F. Blanco, D. Nevin, D. Fayne, F. Mulcahy, M. Hennessy and J.P. Spiers]
- 'Retinazone inhibits certain blood-borne human viruses including Ebola virus Zaire', *Antiviral Chemistry and Chemotherapy*, 23, 5 (2014), 197-215 [A.J. Kesel, Z. Huang, M.G. Murray *et al*]
- 'Molecular topology applied to the discovery of 1-benzyl-2-(3-fluorophenyl)-4-hydroxy-3-(3-phenylpropanoyl)-2H-pyrrole-5-one as a non-ligand-binding-pocket antiandrogen', *Journal of Chemical Information and Modeling*, 54, 10 (2014), 2953-2966 [L. Caboni, M. Gálvez-Llompert, J. Gálvez, F. Blanco, J. Rubio-Martinez, D. Fayne and D.G. Lloyd]
- Finlay, David**, 'Starved human T lymphocytes keep fighting', *European Journal of Immunology* (2015), <http://dx.doi.org/10.1002/eji.201545885> [D. Finlay]
- 'Glucose, glycolysis and lymphocyte responses', *Molecular Immunology* (2015), DOI:10.1016/j.molimm.2015.07.034 [D. Finlay]
- 'Metabolic regulation of natural killer cells', *Biochemical Society Transactions*, 43, 4 (2015), 758-762 [D. Finlay]
- 'Adenosine-mono-phosphate-activated protein kinase-independent effects of metformin in T cells', *PLOS ONE*, 9, 9 (2014), e106710 [M. Zarrouk, D.K. Finlay, M. Foretz, B. Viollet and D.A. Cantrell]
- Kelly, Vincent**, 'The queuine micronutrient: charting a course from microbe to man', *Nutrients*, 7, 4 (2015), 2897-2929 [C. Fergus, D. Barnes, M.A. Alqasem and V.P. Kelly]
- Knox, Andrew**, 'Preparation, anti-trypanosomal activity and localisation of a series of dipeptide-based vinyl sulfones', *Organic and Biomolecular Chemistry*, 12, 38 (2014), 7561-71 [W. Doherty, J. James, P. Evans, L. Martin, N. Adler, D. Nolan and A. Knox]
- Moran, Barry**, 'Digital radiography exposure indices: a review', *Journal of Medical Radiation Sciences*, 61, 2 (2014), 112-8 [U. Mothiram, P.C. Brennan, S.J. Lewis, B. Moran and J. Robinson]
- Murray, James**, 'Guidelines for the use and interpretation of assays for monitoring autophagy', *Autophagy*, 12, 1 (2016), 1-122 [D.J. Klionsky *et al*]
- 'Probing a 3,4-bis-guanidinium diaryl derivative as an allosteric inhibitor of the Ras pathway', *Bioorganic and Medicinal Chemistry Letters*, 25, 19 (2015), 4287-92 [E. Diez-Cecilia, R. Carson, B. Kelly, S. van Schaeuybroeck, J.T. Murray and I. Rozas]
- Nolan, Derek**, 'Coupling of lysosomal and mitochondrial membrane permeabilization in trypanolysis by APOL1', *Nature Communications*, 6 (2015), 8078-8088 [G. Vanwalleghem, F. Fontaine, L. Lecordier *et al*]
- Williams, D. Clive**, 'Induction of apoptosis in oral squamous carcinoma cells by pyrrolo-1,5-benzoxazepines', *Molecular Medicine Reports*, 12, 3 (2015), 3748-54 [K. O'Callaghan, E. Palagano, S. Butini, G. Campiani, D.C. Williams, D.M. Zisterer and J. O'Sullivan]
- 'Antitumor effect of pyrrolo-1,5-benzoxazepine-15 and its synergistic effect with oxaliplatin and 5-FU in colorectal cancer cells', *Cancer Biology and Therapy*, (2016) DOI:10.1080/15384047.2015.1078028 [D. Fiore, M.C. Proto, S. Pisanti *et al*]
- 'Unexpected DNA binding properties with correlated downstream biological applications in mono vs. bis-1,8-naphthalimide Ru(II)-polypyridyl conjugates', *Dalton Transactions*, 44, 37 (2015), 16332-44 [G.J. Ryan, F.E. Poynton, R.B. Elmes, M. Erby, D.C. Williams, S.J. Quinn and T. Gunnlaugsson]
- 'Detailed biological profiling of a photoactivated and apoptosis inducing pdppz ruthenium(II) polypyridyl complex in cancer cells', *Journal of Medicinal Chemistry*, 58, 11 (2015), 4494-505 [S.M. Cloonan, R.B. Elmes, M. Erby, S.A. Bright, F.E. Poynton, D.E. Nolan, S.J. Quinn, T. Gunnlaugsson and D.C. Williams]

Recent publications – Faculty of Engineering, Mathematics and Science

'Unconventional Knoevenagel-type indoles: synthesis and cell-based studies for the identification of pro-apoptotic agents', *European Journal of Medicinal Chemistry*, 102 (2015), 648-60 [A. Spallarossa, C. Caneva, M. Caviglia *et al*]

'Ru(II)-polypyridyl surface functionalised gold nanoparticles as DNA targeting supramolecular structures and luminescent cellular imaging agents', *Nanoscale*, 8, 1 (2015), 563-74 [M. Martínez-Calvo, K.N. Orange, R.B. Elmes, B. la Cour Poulsen, D.C. Williams and T. Gunnlaugsson]

Zisterer, Daniela, 'Induction of apoptosis in oral squamous carcinoma cells by pyrrolo-1,5-benzoxazepines', *Molecular Medicine Reports*, 12, 3 (2015), 3748-54 [K. O'Callaghan, E. Palagano, S. Butini, G. Campiani, D.C. Williams, D.M. Zisterer and J. O.Sullivan]

'Antitumor effect of pyrrolo-1,5-benzoxazepine-15 and its synergistic effect with oxaliplatin and 5-FU in colorectal cancer cells', *Cancer Biology and Therapy* (2015), DOI:10.1080/15384047.2015.1078028 [D. Fiore, M.C. Proto, S. Pisanti *et al*]

'Combretastatins: more than just vascular targeting agents?', *The Journal of Pharmacology and Experimental Therapeutics*, 355, 2 (2015), 212-27 [L.M. Greene, M.J. Meegan and D.M. Zisterer]

'Unconventional Knoevenagel-type indoles: synthesis and cell-based studies for the identification of pro-apoptotic agents', *European Journal of Medicinal Chemistry*, 102 (2015), 648-60 [A. Spallarossa, C. Caneva, M. Caviglia *et al*]

IMMUNOLOGY

Bowie, Andrew, 'Innate immune activation of NF κ B and its antagonism by poxviruses', *Cytokine and Growth Factor Reviews* (2014), <http://hdl.handle.net/2262/71460> [G. Brady and A.G.Bowie]

'DNA sensors are expressed in astrocytes and microglia *in vitro* and are upregulated during gliosis in neurodegenerative disease', *GLIA*, 63, 5 (2015), 812–825 [D.J. Cox, R.H. Field, D.G. Williams, M. Baran, A.G. Bowie, C. Cunningham and A. Dunne]

'A frequent hypofunctional IRAK2 variant is associated with reduced spontaneous hepatitis C virus clearance', *Hepatology*, 62 (2015), 1375-1387 [H. Wang, S. El Maadidi, J. Fischer *et al*]

'Poxvirus protein MC132 from *Molluscum contagiosum* virus inhibits NF- κ B activation by targeting p65 for degradation', *Journal of Virology*, 89, 16 (2015), 8406-15 [G. Brady, D.A. Haas, P.J. Farrell, A. Pichlmair and A.G. Bowie]

'Innate immune recognition of DNA: a recent history', *Virology*, 479-480 (2015), 146-52 [A. Dempsey and A.G. Bowie]

'A coding IRAK2 protein variant compromises toll-like receptor (TLR) signaling and is associated with colorectal cancer survival', *The Journal of Biological Chemistry*, 289, 33 (2014), 23123-31 [H. Wang, S.M. Flannery, S. Dickhöfer *et al*]

'Rad50 and CARD9, missing links in cytosolic DNA-stimulated inflammation', *Nature Immunology*, 15, 6 (2014), 534-6 [A.G. Bowie]

'The TLR signaling adaptor TRAM interacts with TRAF6 to mediate activation of the inflammatory response by TLR4', *Journal of Leukocyte Biology*, 96, 3 (2014), 427-36 [B. Verstak, J. Stack, T. Ve *et al*]

Dunne, Aisling, 'A novel TLR2 agonist from *Bordetella pertussis* is a potent adjuvant that promotes protective immunity with an acellular pertussis vaccine', *Mucosal Immunology*, 8, 3 (2015), 607-617 [A. Dunne, L.A. Mielke, A.C. Allen, C.E. Sutton, R. Higgs, C.C. Cunningham, S.C. Higgins and K.H. Mills]

'DNA sensors are expressed in astrocytes and microglia *in vitro* and are upregulated during gliosis in neurodegenerative disease', *GLIA*, 63, 5 (2015), 812–825 [D.J. Cox, R.H. Field, D.G. Williams, M. Baran, A.G.Bowie, C. Cunningham and A. Dunne]

Recent publications – Faculty of Engineering, Mathematics and Science

- Fletcher, Jean**, 'Polyfunctional, pathogenic CD161⁺ Th17 lineage cells are resistant to regulatory T cell-mediated suppression in the context of autoimmunity', *Journal of Immunology*, 195, 2 (2015), 528-540 [S.A. Basdeo, B. Moran, D. Cluxton, (...), U. Fearon, and J.M. Fletcher]
- Gardiner, Clair**, '2DL1, 2DL2 and 2DL3 all contribute to KIR phenotype variability on human NK cells', *Genes and Immunity*, 16, 5 (2015), 301-10 [S.E. Dunphy, K.J. Guinan, C.N. Chorcora, J. Jayaraman, J.A. Traherne, J. Trowsdale, D. Pende, D. Middleton and C.M. Gardiner]
- 'Increased frequencies of the killer immunoglobulin-like receptor genes KIR2DL2 and KIR2DS2 are associated with neuroblastoma', *Tissue Antigens*, 86, 3 (2015), 172-7 [S.E. Keating, C. Ni Chorcora, M.M. Dring, R.L. Stallings, A. O'Meara and C.M. Gardiner]
- 'NK cell function and receptor diversity in the context of HCV infection', *Frontiers in Microbiology*, 6 (2015), 1061 [C.M. Gardiner]
- Lavelle, Edward**, 'Memory Th1 cells are protective in invasive *Staphylococcus aureus* infection', *PLoS Pathogens*, 11, 11 (2015), e1005226 [A.F. Brown, A.G. Murphy, S.J. Lalor *et al*]
- 'The synthesis and biological evaluation of mycobacterial p-hydroxybenzoic acid derivatives (p-HBADs)', *Organic and Biomolecular Chemistry*, 12, 7 (2014), 1114-1123 [J. Bourke, C.F. Brereton, S.V. Gordon, E.C. Lavelle and E.M. Scanlan]
- 'Immunomodulatory properties of the vaccine adjuvant alum', *Current Opinion in Immunology*, 28, 1 (2014), 1-5 [E. Oleszycka and E.C. Lavelle]
- 'Antigen delivery systems I: nonliving microparticles, liposomes, and immune-stimulating complexes (ISCOMs)', *Mucosal Immunology*, 1-2 (2015), 1211-1231 [C. McEntee, E.C. Lavelle and D.T. O'Hagan]
- McLoughlin, Rachel**, 'Manipulation of autophagy in phagocytes facilitates *Staphylococcus aureus* bloodstream infection', *Infection and Immunity*, 83, 9 (2015), 3445- [K.M. O'Keefe, M.M. Wilk, J.M. Leech *et al*]
- 'Memory Th1 cells are protective in invasive *Staphylococcus aureus* infection', *PLoS Pathogens*, 11, 11 (2015), e1005226 [A.F. Brown, A.G. Murphy, S.J. Lalor *et al*]
- Mills, Kingston**, 'A small-molecule inhibitor of the NLRP3 inflammasome for the treatment of inflammatory diseases', *Nature Medicine*, 21, 3 (2015), 248-257 [R.C. Coll, A.A.B. Robertson, J.J. Chae, *et al*]
- 'Altered expression of caspases-4 and -5 during inflammatory bowel disease and colorectal cancer - novel diagnostic and therapeutic potential', *Clinical and Experimental Immunology*, 181, 1 (2015), 39-50 [B. Flood, K. Oficjalska, D. Laukens, J. Fay, K.H. Mills, K. Sheahan, E.J. Ryan, G.A. Doherty, E.W. Kay and E.M. Creagh]
- 'Respiratory infection with a bacterial pathogen attenuates CNS autoimmunity through IL-10 induction', *Brain, Behavior, and Immunity*, 50 (2015), 41-46 [S.C. Edwards, S.C. Higgins and K.H.G Mills]
- 'T cells - protective or pathogenic in Alzheimer's disease?', *Journal of Neuroimmune Pharmacology*, PMID 25957956 (2015), <http://dx.doi.org/10.1007/s11481-015-9612-2> [R.M. McManus, K.H.G. Mills and M.A. Lynch]
- ' $\gamma\delta$ T cells and NK cells - distinct pathogenic roles as innate-like immune cells in CNS autoimmunity', *Frontiers in Immunology*, 6 (2015), 455 [S.C. Edwards, A.M. McGinley, N.C. McGuinness and K.H. Mills]
- 'Polyfunctional, pathogenic CD161⁺ Th17 lineage cells are resistant to regulatory T cell-mediated suppression in the context of autoimmunity', *Journal of Immunology*, 195, 2 (2015), 528-40 [S.A. Basdeo, B. Moran, D. Cluxton, M. Canavan, J. McCormick, M. Connolly, C. Orr, K.H. Mills, D.J. Veale, U. Fearon and J.M. Fletcher]
- 'Roads to the development of improved pertussis vaccines paved by immunology', *Pathogens and Disease*, DOI:10.1093/femspd/ftv067 (2015) [J. Brummelman, M.M. Wilk, W.G. Han, C.A. van Els and K.H. Mills]

Recent publications – Faculty of Engineering, Mathematics and Science

- O'Farrelly, Cliona*, 'RNA-seq transcriptional profiling of peripheral blood leukocytes from cattle infected with *Mycobacterium bovis*', *Frontiers in Immunology*, 5 (2014), 396 [K.E. McLoughlin, N.C. Nalpas, K. Rue-Albrecht *et al*]
- O'Neill, Luke*, 'NLRP3 at the interface of metabolism and inflammation', *Immunological Reviews*, 265, 1 (2015), 53-62 [M. Haneklaus and L.A. O'Neill]
- 'GSTO1-1 modulates metabolism in macrophages activated through the LPS and TLR4 pathway', *Journal of Cell Science*, 128, 10 (2015), 1982-1990 [D. Menon, R. Coll, L.A. O'Neill and P.G. Board]
- 'A broken Krebs cycle in macrophages', *Immunity*, 42, 3 (2015), 393-394 [L.A. O'Neill]
- 'Metabolic reprogramming in macrophage polarization', *Frontiers in Immunology*, 5 (2014), 420 [S. Galván-Peña and L.A. O'Neill]
- 'LPS induces the degradation of programmed cell death protein 4 (PDCD4) to release Twist2, activating c-Maf transcription to promote interleukin-10 production', *The Journal of Biological Chemistry*, 289, 33 (2014), 22980-90 [M.W. van den Bosch, E. Palsson-Mcdermott, D.S. Johnson and L.A. O'Neill]
- 'mTOR- and HIF-1 α -mediated aerobic glycolysis as metabolic basis for trained immunity', *Science*, 345, 6204 (2014), 1250684 [S.C. Cheng, J. Quintin, R.A. Cramer *et al*]
- 'Interleukin-10 regulates the inflammasome-driven augmentation of inflammatory arthritis and joint destruction', *Arthritis Research and Therapy*, 16, 4 (2014), 419 [C.J. Greenhill, G.W. Jones, M.A. Nowell *et al*]
- 'Promyelocytic leukemia protein interacts with the apoptosis-associated speck-like protein to limit inflammasome activation', *The Journal of Biological Chemistry*, 289, 10 (2014), 6429-37 [J.K. Dowling, C.E. Becker, N.M. Bourke, S.C. Corr, D.J. Connolly, S.R. Quinn, P.P. Pandolfi, Mansell A and L.A. O'Neill]
- 'The role of Ets2 transcription factor in the induction of microRNA-155 (miR-155) by lipopolysaccharide and its targeting by interleukin-10', *The Journal of Biological Chemistry*, 289, 7 (2014), 4316-25 [S.R. Quinn, N.E. Mangan, B.E. Caffrey, M.P. Gantier, B.R. Williams, P.J. Hertzog, C.E. McCoy and O'Neill L.A.]
- Raverdeau, Mathilde*, 'Modulation of T cell and innate immune responses by retinoic acid', *Journal of Immunology*, 192, 7 (2014), 2953-8 [M. Raverdeau and K.H. Mills]
- 'Protective role for caspase-11 during acute experimental murine colitis', *Journal of Immunology*, 194, 3 (2015), 1252-60 [K. Oficjalska, M. Raverdeau, G. Aviello *et al*]
- 'Retinoic acid receptors control spermatogonia cell-fate and induce expression of the SALL4 transcription factor', *PLOS Genetics*, 11, 10 (2015), e1005501 [A. Gely-Pernot, M. Raverdeau, M. Teletin *et al*]
- Stevenson, Nigel*, 'MicroRNA: master controllers of intracellular signaling pathways', *Cellular and Molecular Life Sciences*, 72, 18 (2015), 3531-3542 [P.Y. Lui, D.Y. Jin and N.J. Stevenson]
- 'Interdependent and independent roles of type I interferons and IL-6 in innate immune, neuroinflammatory and sickness behaviour responses to systemic poly I:C', *Brain, Behaviour and Immunity*, 48 (2015), 274-286 [C. Murray, É.W. Griffin, E. O'Loughlin, A. Lyons, E. Sherwin, S. Ahmed, N.J. Stevenson, A. Harkin and C. Cunningham]

School of Chemistry

- Baker, Robert*, 'Further evidence on the importance of fluorine-fluorine interactions in supramolecular chemistry: a combined structural and computational study', *Crystal Growth and Design*, 15 (2015), 2835-2841 [H. Omorodion, B. Twamley, J. Platts and R. Baker]

Recent publications – Faculty of Engineering, Mathematics and Science

Blasco, Salvador, 'The application of chiroptical spectroscopy (circular dichroism) in quantifying binding events in lanthanide directed synthesis of chiral luminescent self-assembly structures', *Chemical Science*, 6, 1 (2015), 457-471 [O.V. Kotova, S. Blasco, B. Twamley, J.E. O'Brien, R.D. Peacock, J.A. Kitchen, M. Mart-nez-Calvo and T. Gunnlaugsson]

'Supramolecular pyridyl urea gels as soft matter with antibacterial properties against MRSA and/or *E. coli*', *Chemical Communications*, 50, 74 (2014), 10819-10822 [K. Pandurangan, J.A. Kitchen, S. Blasco, F. Paradisi and T. Gunnlaugsson]

'Unexpected self-sorting self-assembly formation of a [4:4] sulfate:ligand cage from a preorganized tripodal urea ligand', *Angewandte Chemie International Edition*, 54, 15 (2015), 4566-4570 [K. Pandurangan, J.A. Kitchen, S. Blasco, E.M. Boyle, B. Fitzpatrick, M. Feeney, P.E. Kruger and T. Gunnlaugsson]

Boland, John, 'Effective electrode length enhances electrical activation of nanowire networks: experiment and simulation', *ACS Nano*, 8, 9 (2014), 9542-9549 [J.A. Fairfield, C. Ritter, A.T. Bellew, M.S. Ferreira and J. J. Boland]

'Single-atom based coherent quantum interference device structure', *Nano Letters*, 15, 5 (2015), 2881-2886 [B. Naydenov, I. Rungger, M. Mantega, S. Sanvito and J.J. Boland]

'Ultimate conductivity performance in metallic nanowire networks', *Nanoscale*, 7, 30 (2015), 13011-13016 [C.G. Rocha, C. O'Callaghan, C. Ritter, H. Manning, A.T. Bellew, J.J. Boland and M.S. Ferreira]

'Quantitative study of the photothermal properties of metallic nanowire networks', *ACS Nano*, 9, 5 (2015), 5551-5558 [A.P. Bell, J.A. Fairfield, E.K. McCarthy, S. Mills, J.J. Boland, G. Baffou and D. McCloskey]

'Cross-linking the fibers of supramolecular gels formed from a tripodal terpyridine derived ligand with d-block metal ions', *Inorganic Chemistry*, 54, 16 (2015), 7735-7741 [O. Kotova, R. Daly, C.M.G. dos Santos, P.E. Kruger, J.J. Boland and T. Gunnlaugsson]

'Amyloid oligomers and mature fibrils prepared from an innocuous protein cause diverging cellular death mechanisms', *Journal of Biological Chemistry*, 290, 47 (2015), 28343-28352 [N.P. Harte, I. Kiyubin, E.K. McCarthy, S. Min, S.A. Garrahy, Y. Xie, G.P. Davey, J.J. Boland, M.J. Rowan and K.H. Mok]

'Resistance of single Ag nanowire junctions and their role in the conductivity of nanowire networks', *ACS Nano*, 9, 11 (2015), 11422-11429 [A.T. Bellew, H.G. Manning, C. Gomes da Rocha, M.S. Ferreira and J.J. Boland]

'The effect of device fabrication on quasi-static elastic behaviour of silicon nanocantilever arrays', *Journal of Micromechanics and Microengineering*, 25 (125007) (2015), 1-8 [P. Gleeson, K. Lin, A. Potie, C. Pawashe, J.P. de Silva, G.L.W. Cross and J.J. Boland]

'Adhesion limits and design criteria for nanorelays', *Transactions on Electron Devices*, 63, 1 (2016), 465-470 [K.L. Lin, G.L.W. Cross, P. Gleeson *et al*]

'Taming self-organization dynamics to dramatically control porous architectures', *ACS Nano* (2016), <http://dx.doi.org/10.1021/acsnano.5b06082> [R. Daly, J.E. Sader, and J.J. Boland]

Boyce, Sinead, 'A one-pot synthesis of 3-nitrothiophene and 3-nitro-2-substituted thiophenes', *Tetrahedron*, 71 (2015), 4598 [N. McNabola, C.J. O'Connor, M.D. Roydhouse, M.D. Wall and J.M. Southern]

Colavita, Paula, 'Low overpotential high activity manganese/ruthenium mixed oxide electrocatalysts for oxygen evolution in alkaline media', *ECS Transactions*, 64, 45 (2015), 143-154 [M.P. Browne, P.E. Colavita and M.E.G. Lyons]

'Enhanced antifouling properties of carbohydrate coated poly(ether sulfone) membranes', *ACS Applied Materials and Interfaces*, 7, 31 (2015), 17238-17246 [M.D. Angione, T. Duff, A.P. Bell, S.N. Stamatina, C. Fay, D. Diamond, E.M. Scanlan and P.E. Colavita]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Green synthesis of metal nanoparticles via natural extracts: the biogenic nanoparticle corona and its effects on reactivity', *ACS Sustainable Chemistry and Engineering*, 3, 7 (2015), 1610-1617 [K.M. Metz, S.E. Sanders, J.P. Pender, M.R. Dix, D.T. Hinds, S.J. Quinn, A.D. Ward, P. Duffy, R.J. Cullen and P.E. Colavita]
- 'Template-free ultraspray pyrolysis synthesis of N/Fe-doped carbon microspheres for oxygen reduction electrocatalysis', *Journal of Materials Chemistry A* (2015), <http://hdl.handle.net/2262/74599> [S. Marzorati, J. M. Vasconcelos, J. Ding, M. Longhi and P.E. Colavita]
- Draper, Sylvia**, 'One-pot, high-yielding, oxidative cyclodehydrogenation route for N-doped nanographene synthesis', *Organic Letters*, 18, 1 (2016), 88-91 [C. Delaney, G.M. Ó Máille, B. Twamley and S.M. Draper]
- Duesberg, Georg**, 'Growth of high-density carbon nanotube forests on conductive TiSiN supports', *Applied Physics Letters*, 106, 8 (2015), <http://hdl.handle.net/2262/75203> [J. Yang, S. Esconjauregui, A.W. Robertson, Y. Guo, T. Hallam, H. Sugime, G. Zhong, G.S. Duesberg and J. Robertson]
- 'Basal-plane functionalization of chemically exfoliated molybdenum disulfide by diazonium salts', *ACS Nano*, 9, 6 (2015), 6018-6030 [K.C. Knirsch, N.C. Berner, H.C. Nerl *et al*]
- 'Controlled folding of graphene: GraFold printing', *Nano Letters*, 15, 2 (2015), 857-863 [T. Hallam, A. Shakouri, E. Poliani *et al*]
- 'Noncovalently functionalized monolayer graphene for sensitivity enhancement of surface plasmon resonance immunosensors', *Journal of the American Chemical Society*, 137, 8 (2015), 2800-2803 [M. Singh, M. Holzinger, M. Tabrizian, S. Winters, N.C. Berner, S. Cosnier and G.S. Duesberg]
- 'Preparation of gallium sulfide nanosheets by liquid exfoliation and their application as hydrogen evolution catalysts', *Chemistry of Materials*, 27, 9 (2015), 3483-3493 [A. Harvey, C. Backes, Z. Gholamvand *et al*]
- 'Investigation of 2D transition metal dichalcogenide films for electronic devices', *Workshop and international conference on ultimate integration on silicon (EUROSOL-ULIS), Bologna* (2015), 73-76 [G.S. Duesberg, T. Hallam, M. O'Brien, (...), N. McEvoy and C. Yim]
- 'Spectral sensitivity of a graphene/silicon pn-junction photodetector', *Workshop and international conference on ultimate integration on silicon (EUROSOL-ULIS), Bologna* (2015), 77-80 [S. Riazimehr, D. Schneider, C. Yim, (...), G.S. Duesberg and M.C. Lemme]
- Dunne, Peter**, 'The sequential continuous-flow hydrothermal synthesis of molybdenum disulphide', *Chemical Communications*, 51, 19 (2015), 4048-4050 [P.W. Dunne, A.S. Munn, C.L. Starkey and E.H. Lester]
- 'Large-scale continuous hydrothermal production and activation of ZIF-8', *Chemical Communications*, 51, 64 (2015), 12811-12814 [A.S. Munn, P.W. Dunne, S.V.Y. Tang and E.H. Lester]
- 'Highly soluble ligand stabilized tin oxide nanocrystals: gel formation and thin film production', *Crystal Growth and Design*, 14, 9 (2014), 4819-4826 [J.S. McManus, P.D. Cunningham, L.B. Regan, A. Smith, D.W. McGrath and P.W. Dunne]
- 'Continuous synthesis of dispersant-coated hydroxyapatite plates', *CrystEngComm*, 17, 32 (2015), 6175-6182 [M. Gimeno-Fabra, F. Hild, P.W. Dunne, K. Walton, D.M. Grant, D.J. Irvine and E.H. Lester]
- 'The rapid size- and shape-controlled continuous hydrothermal synthesis of metal sulphide nanomaterials', *Nanoscale*, 6, 4 (2014), 2406-2418 [P.W. Dunne, C.L. Starkey, M. Gimeno-Fabra, and E.H. Lester]
- 'Control of chemical state of cerium in doped anatase TiO₂ by solvothermal synthesis and its application in photocatalytic water reduction', *Journal of Materials Chemistry A*, 3, 18 (2015), 9890-9898 [J. Fonseca De Lima, M.H. Harunsani, D.J. Martin, *et al*]

Recent publications – Faculty of Engineering, Mathematics and Science

- Evans, Rachel**, 'Regioregular polythiophene-porphyrin supramolecular copolymers for optoelectronic applications', *Macromolecular Chemistry and Physics* (2016), <http://hdl.handle.net/2262/75273> [M. Chevrier, J. Kesters, C. Blayo *et al*]
- 'Synergistic photoluminescence enhancement in conjugated polymer-di-ureasil organic-inorganic composites', *Chemical Science*, 6, 12 (2015), 7227-7237 [N. Willis-Fox, A. Marques, A. Marques, J. Arlt, U. Scherf, L. Carlos, H. Burrows and R. Evans]
- 'Expanding the light absorption of poly(3-hexylthiophene) by end-functionalization with π -extended porphyrins', *Chemical Communications*, 52 (2016), 171-174 [M. Chevrier, S. Richeter, O. Coulembier, M. Surin, A. Mehdi, R. Lazzaroni, R.C. Evans, P. Dubois and S. Clément]
- 'Tunable white-light emission from conjugated polymer-di-ureasil materials', *Advanced Functional Materials* (2016), <http://dx.doi.org/10.1002/adfm.201504017> [N. Willis-Fox, M. Kraft, J. Arlt, U. Scherf and R.C. Evans]
- 'Self-assembled conjugated polyelectrolyte-surfactant complexes as efficient cathode interlayer materials for bulk heterojunction organic solar cells', *Journal of Materials Chemistry A*, 3, 47 (2015), 23905-23916 [M. Chevrier, J.E. Houston and J. Kesters *et al*]
- 'Design and response of high-efficiency, planar, doped luminescent solar concentrators using organic-inorganic di-ureasil waveguides', *Advanced Optical Materials* (2016), <http://dx.doi.org/10.1002/adom.201500412> [A. Kaniyoor, B. Mckenna, S. Comby and R.C. Evans]
- Gounko, Iouri**, 'The interaction of QDs with RAW264.7 cells: nanoparticle quantification, uptake kinetics and immune responses study', *RSC Advances*, 5, 53 (2015), 42250-42258 [O. Gladkovskaya, V.A. Gerard, M. Nosov, Y.K. Gun'ko, G.M. O'Connor and Y. Rochev]
- 'Advances in the organometallic chemistry of carbon nanomaterials', *Organometallics*, 34, 11 (2015), 2086-2097 [L.J. Brennan and Y.K. Gun'ko]
- 'Investigation of biocompatible complexes of Mn²⁺-doped ZnS quantum dots with chlorin e6', *Journal of Optical Technology*, 81, 8 (2014), 444-448 [A.K. Visheratina, I.V. Martynenko, A.O. Orlova, V.G. Maslov, A.V. Fedorov, A.V. Baranov and Gun'ko Y.K.]
- 'Intrinsic chirality of CdSe/ZnS quantum dots and quantum rods', *Nano Letters*, 15, 5 (2015), 2844-2851 [M.V. Mukhina, V.G. Maslov, A.V. Baranov, A.V. Fedorov, A.O. Orlova, F. Purcell-Milton, J. Govan and Y.K. Gun'ko]
- 'Preparation of chiral quantum dots', *Nature Protocols*, 10, 4 (2015), 558-573 [M.P. Moloney, J. Govan, A. Loudon, M. Mukhina and Y.K. Gun'ko]
- 'Water-based ultrasonic synthesis of SbSI nanoneedles', *Materials Letters*, 160 (2015), 113-116 [O. Gladkovskaya, I. Rybina, Y.K. Gun'ko, A. Erxleben, G.M. O'Connor and Y. Rochev]
- 'Chlorin e6-ZnSe/ZnS quantum dots based system as reagent for photodynamic therapy', *Nanotechnology*, 26, 5 (2015), <http://dx.doi.org/10.1088/0957-4484/26/5/055102> [I.V. Martynenko, V.A. Kuznetsova, A.O. Orlova *et al*]
- Grayson, David**, 'Cleavage of 2-(arylamino)-4,6-dimethoxypyrimidines to yield arylguanidines', *European Journal of Organic Chemistry*, 2014, 17 (2014), 3565-3569 [J.W. Shaw, D.H. Grayson and I. Rozas]
- 'Synthesis of cyclic guanidines: 2-arylamino-1,4,5,6-tetrahydropyrimidines', *Arkivoc*, ii (2014), 161-174 [J. Shaw, I. Rozas and D.H. Grayson]
- 'Using N-substituted-2-amino-4,6-dimethoxypyrimidines in the synthesis of aliphatic guanidines', *Tetrahedron Letters*, 56, 35 (2015), 4990-4992 [J.W. Shaw, L. Barbance, D.H. Grayson and I. Rozas]
- 'Ozonolysis of some 8-alkoxyquinolines, and synthesis of a precursor to the non-sedating antihistamine Claritin', *Arkivoc*, 2014, 6 (2014), 38-53 [M.C. Eichler and D.H. Grayson]
- 'Reactions of aldehydes with organozinc reagents derived from (*E*)-3-bromo- and (*E*)-3-iodo-1-phenylsulfonylprop-1-ene', *Arkivoc*, 2014, 5 (2014), 420-429 [E.T. Gallagher and D.H. Grayson]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'An improved synthesis of 10-isobornylsultone', *Tetrahedron Asymmetry*, 25, 15 (2014), 1150-1152 [F.W. Lewis and D.H. Grayson]
- Gunnlaugsson, Thorfinnur**, 'Recent advances in the development of synthetic chemical probes for glycosidase enzymes', *Chemical Communications*, 51, 53 (2015), 10576-10588 [H.M. Burke, T. Gunnlaugsson and E.M. Scanlan]
- 'Reversal of a single base-pair step controls guanine photo-oxidation by an intercalating ruthenium(II) dipyridophenazine complex', *Angewandte Chemie International Edition*, 54, 29 (2015), 8364–8368 [P.M. Keane, F.E. Poynton, J.P. Hall, I.V. Sazanovich, M. Towrie, T. Gunnlaugsson, S.J. Quinn, C.J. Cardin and J.M. Kelly]
- 'Enantiomeric conformation controls rate and yield of photoinduced electron transfer in DNA sensitized by Ru(II) dipyridophenazine complexes', *Journal of Physical Chemistry Letters*, 6, 4 (2015), 734-738 [P.M. Keane, F.E. Poynton, J.P. Hall, I.P. Clark, I.V. Sazanovich, M. Towrie, T. Gunnlaugsson, S.J. Quinn, C.J. Cardin and J.M. Kelly]
- 'Unexpected self-sorting self-assembly formation of a [4:4] sulfate:ligand cage from a preorganized tripodal urea ligand', *Angewandte Chemie International Edition*, 54, 15 (2015), 4566–4570 [K. Pandurangan, J.A. Kitchen, S. Blasco, E.M. Boyle, B. Fitzpatrick, M. Feeney, P.E. Kruger and T. Gunnlaugsson]
- 'Lanthanide directed self-assembly of highly luminescent supramolecular "peptide" bundles from α -amino acid functionalized 2,6-bis(1,2,3-triazol-4-yl)pyridine (btp) ligands', *Inorganic Chemistry*, 54, 4 (2015), 1426-1439 [J.P. Byrne, J.A. Kitchen, J.E. O'Brien, R.D. Peacock and T. Gunnlaugsson]
- 'Tri- and tetra-substituted cyclen based lanthanide(III) ion complexes as ribonuclease mimics: a study into the effect of log K_a , hydration and hydrophobicity on phosphodiester hydrolysis of the RNA-model 2-hydroxypropyl-4-nitrophenyl phosphate (HPNP)', *Organic and Biomolecular Chemistry*, 13, 20 (2015), 5804-5816 [A. Fanning, S.E. Plush and T. Gunnlaugsson]
- 'Detailed biological profiling of a photoactivated and apoptosis inducing pdppz ruthenium(II) polypyridyl complex in cancer cells', *Journal of Medicinal Chemistry*, 58, 11 (2015), 4494-4505 [S.M. Cloonan, R.B.P. Elmes, M. Erby, S.A. Bright, F.E. Poynton, D.E. Nolan, S.J. Quinn, T. Gunnlaugsson and D.C. Williams]
- 'Imaging agents', *Chemical Society Reviews*, 44, 14 (2015), 4484- [C.J. Chang, T. Gunnlaugsson and T.D. James]
- 'Sensor targets', *Chemical Society Reviews*, 44, 13 (2015), 4176- [C.J. Chang, T. Gunnlaugsson and T.D. James]
- 'Towards multifunctional lanthanide-based metal-organic frameworks', *Chemical Communications*, 51, 68 (2015), 13313-13316 [G. Tobin, S. Comby, N. Zhu, R. Clérac, T. Gunnlaugsson and W. Schmitt]
- Kelly, John**, 'Reversal of a single base-pair step controls guanine photo-oxidation by an intercalating ruthenium(II) dipyridophenazine complex', *Angewandte Chemie International Edition*, 54, 29 (2015), 8364–8368 [P.M. Keane, F.E. Poynton, J.P. Hall, I.V. Sazanovich, M. Towrie, T. Gunnlaugsson, S.J. Quinn, C.J. Cardin and J.M. Kelly]
- 'Enantiomeric conformation controls rate and yield of photoinduced electron transfer in DNA sensitized by Ru(II) dipyridophenazine complexes', *Journal of Physical Chemistry Letters*, 6, 4 (2015), 734-738 [P.M. Keane, F.E. Poynton, J.P. Hall, I.P. Clark, I.V. Sazanovich, M. Towrie, T. Gunnlaugsson, S.J. Quinn, C.J. Cardin and J.M. Kelly]
- 'Monitoring one-electron photo-oxidation of guanine in DNA crystals using ultrafast infrared spectroscopy', *Nature Chemistry*, 7 (2015), 961-967 [J.P. Hall, F.E. Poynton, P.M. Keane, S.P. Gurung, J.A. Brazier, D.J. Cardin, G. Winter, T. Gunnlaugsson, I.V. Sazanovich, M. Towrie, C.J. Cardin, J. M. Kelly and S.J. Quinn]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Monitoring guanine photo-oxidation by enantiomerically resolved Ru(II) dipyrindo-phenazine complexes using inosine-substituted oligonucleotides', *Faraday Transactions*, 185 (2015), 455-469 [P.M. Keane, F.E. Poynton, J.P. Hall, I.P. Clark, I.V. Sazanovich, M. Towrie, T. Gunnlaugsson, S.J. Quinn, C.J. Cardin and J.M. Kelly]
- 'Direct observation by time-resolved infrared spectroscopy of the bright and the dark excited states of the [Ru(phen)₂(dppz)]²⁺ light-switch compound in solution and when bound to DNA', *Chemical Science*, 7 (2016), 3074-3085 [F.E. Poynton, J.P. Hall, P.M. Keane, C. Schwarz, I.V. Sazanovich, M. Towrie, T. Gunnlaugsson, C.J. Cardin, D.J. Cardin, S. J. Quinn, C. Long and J.M. Kelly]
- 'Long-lived excited state dynamics of i-motif structures probed by time-resolved infrared spectroscopy', *ChemPhysChem*, 17 (2016), 1281-1287 [P.M. Keane, F.R. Baptista, S.P. Gurung, S.J. Devereux, I.V. Sazanovich, M. Towrie, J. A. Brazier, C.J. Cardin, J.M. Kelly and S.J. Quinn]
- Lyons, Michael**, 'Low overpotential high activity mixed manganese and ruthenium oxide electrocatalysts for oxygen evolution reaction in alkaline media', *ACS Catalysis*, 6 (2016), 2408-2415 [M.P. Browne, H. Nolan, G.S. Duesberg, P.E. Colavita and M.E.G. Lyons]
- 'Comparison of liquid exfoliated transition metal dichalogenides reveals MoSe₂ to be the most effective hydrogen catalyst', *Nanoscale*, 8 (2016), 5737-5749 [Z. Gholmvand, D. McInteer, C. Backes, N. McEvoy, A. Harvey, N.C. Berner, D. Hanlon, C. Brady, I. Godwin, A. Rovetta, M.E.G. Lyons, G. Duesberg and J.N. Coleman]
- 'A structural and spectroscopic study of the first uranyl selenocyanate, [Et₄N]₃[UO₂(NCSe)₅]', *Inorganics*, 4, 4 (2016), <http://dx.doi.org/10.3390/inorganics4010004> [S. Nuzzo, M.P. Browne, B. Twamley, M.E.G. Lyons and R.J. Baker]
- 'The oxygen evolution reaction: mechanistic concepts and catalyst design', *Photoelectrochemical solar fuel production*, eds S. Gimenez and J. Bisquert, Switzerland, Springer International Publishing (2016), 41-104 [R.L. Doyle and M.E.G. Lyons]
- McDonald, Aidan**, 'Synthesis and characterisation of a mesocyclic tripodal triamine ligand', *Organic and Biomolecular Chemistry*, 14, 2 (2016), 483-494 [A.D. Ure, I.A. Lázaro, M. Cotter and A.R. McDonald]
- 'Nucleophilic reactivity of a metal-bound superoxide ligand', *Synlett*, 26, 15 (2015), 2060-2066 [A.D. Ure and A.R. McDonald]
- 'Tethered pincer complexes as recyclable homogeneous catalysts', *Topics in Organometallic Chemistry*, 54 (2015), 335-370 [A.R. McDonald and H.P. Dijkstra]
- McGouran, Joanna**, 'Regulation of SUMO2 target proteins by the proteasome in human cells exposed to replication stress', *Journal of Proteome Research*, 14, 4 (2015), 1687-99 [S. Bursomanno, J.F. McGouran, B.M. Kessler, I.D. Hickson and Y. Liu]
- 'Comparison of neutralizing antibody responses elicited from highly diverse polyvalent heterotrimeric HIV-1 gp140 cocktail immunogens versus a monovalent counterpart in rhesus macaques', *PLOS ONE*, 9, 12 (2014), e114709 [E.J. Bowles, T. Schiffner, M. Rosario *et al*]
- 'Genetic control of differential acetylation in diabetic rats', *PLOS ONE*, 9, 4 (2014), e94555 [P.J. Kaisaki, G.W. Otto, J.F. McGouran *et al*]
- 'Variant PRC1 complex-dependent H2A ubiquitylation drives PRC2 recruitment and polycomb domain formation', *Cell*, 157, 6 (2014), 1445-59 [N.P. Blackledge, A.M. Farcas, T. Kondo *et al*]
- 'Cofactor strap regulates oxidative phosphorylation and mitochondrial p53 activity through ATP synthase', *Cell Death and Differentiation*, 22, 1 (2015), 156-63 [S. Maniam, A.S. Coutts, M.R. Stratford, J. McGouran, B. Kessler and N.B. La Thangue]
- Naydenov, Borislav**, 'Single-atom based coherent quantum interference device structure', *Nano Letters*, 15, 5 (2015), 2881-2886 [B. Naydenov, I. Rungger, M. Mantega, S. Sanvito and J.J. Boland]

Recent publications – Faculty of Engineering, Mathematics and Science

- Purcell-Milton, Finn**, 'Optical properties of hollow polymer microspheres loaded with semiconductor quantum dots', *International conference on transparent optical networks*, Graz; Austria (2014), 6876653 [D. Savateeva, D. Melnikau, J.E. McCarthy, (...), K.I. Rusakov, Y.P. Rakovich]
- 'Intrinsic chirality of CdSe/ZnS quantum dots and quantum rods', *Nano Letters*, 15, 5 (2015), 2844-2851 [M.V. Mukhina, V.G. Maslov, A.V. Baranov, A.V. Fedorov, A.O. Orlova, F. Purcell-Milton, J. Govan and Y.K. Gun'Ko]
- 'Enantioselective cellular uptake of chiral semiconductor nanocrystals', *Nanotechnology*, 27, 7 (2016), <http://dx.doi.org/10.1088/0957-4484/27/7/075102> [I. Martynenko, V. Kuznetsova, I. Litvinov et al]
- Rozas, Isabel**, 'Aromatic amino acids-guanidinium complexes through cation- π interactions', *Molecules*, 20, 5 (2015), 9214-28 [C. Trujillo, A.A. Rodriguez-Sanz and I. Rozas]
- Erratum: ' α 2-adrenoceptor antagonists: synthesis, pharmacological evaluation, and molecular modeling investigation of pyridinoguanidine, pyridino-2-aminoimidazoline and their derivatives' (*Journal of Medicinal Chemistry*, 58 (2015), 963-977. DOI: 10.1021/jm501635e)', *Journal of Medicinal Chemistry*, 58, 8 (2015), 3638 [B. Kelly, M. McMullan, C. Muguruza, J.E. Ortega, J.J. Meana, L.F. Callado and I. Rozas]
- 'Using N-substituted-2-amino-4,6-dimethoxyypyrimidines in the synthesis of aliphatic guanidines', *Tetrahedron Letters*, 56, 35 (2015), 4990-4992 [J.W. Shaw, L. Barbance, D.H. Grayson and I. Rozas]
- 'Influence of fluoro and cyano substituents in the aromatic and antiaromatic characteristics of cyclooctatetraene', *Physical Chemistry Chemical Physics*, 17, 22 (2015), 14961-14971 [G. Sánchez-Sanz, C. Trujillo, I. Rozas and I. Alkorta]
- 'Probing a 3,4'-bis-guanidinium diaryl derivative as an allosteric inhibitor of the Ras pathway', *Bioorganic and Medicinal Chemistry Letters*, 25, 19 (2015), 4287-92 [E. Diez-Cecilia, R. Carson, B. Kelly, S. van Schaeybroeck J.T. Murray and I. Rozas]
- Scanlan, Eoin**, 'Lead structures for applications in photodynamic therapy 7. Efficient synthesis of amphiphilic glycosylated lipid porphyrin derivatives: refining linker conjugation for potential PDT applications', *Tetrahedron*, 71, 24 (2015), 4145-4153 [C. Moylan, A.M.K. Sweed, Y.M. Shaker, E.M. Scanlan and M.O. Senge]
- 'Recent advances in the development of synthetic chemical probes for glycosidase enzymes', *Chemical Communications*, 51, 53 (2015), 10576-10588 [H.M. Burke, T. Gunnlaugsson and E.M. Scanlan]
- 'Intramolecular thiol-yne cyclisation as a novel strategy for thioglycal synthesis', *Chemical Communications*, 51, 41 (2015), 8672-8674 [V. Corcé, L. McSweeney, A. Malone and E.M. Scanlan]
- Schmitt, Wolfgang**, 'Synthesis, characterization and magnetic properties of ultrafine Co₃O₄ octahedra', *AIP Advances*, 5, 8 (2015), 087122- [Y.H. Chen, J.F. Zhou, D. Mullarkey, (...), M. Coey and H.Z. Zhang]
- 'Towards multifunctional lanthanide-based metal-organic frameworks', *Chemical Communications*, 51, 68 (2015), 13313-13316 [G. Tobin, S. Comby, N. Zhu, R. Clérac, T. Gunnlaugsson and W. Schmitt]
- 'Photoluminescent lead(II) coordination polymers stabilised by bifunctional organoarsenate ligands', *Science and Technology of Advanced Materials*, 16, 2 (2015), 024803- [J. Lin, C.I. Onet and W. Schmitt]
- Senge, Mathias**, 'Lead structures for applications in photodynamic therapy 7. Efficient synthesis of amphiphilic glycosylated lipid porphyrin derivatives: refining linker conjugation for potential PDT applications', *Tetrahedron*, 71, 24 (2015), 4145-4153 [C. Moylan, A.M.K. Sweed, Y.M. Shaker, E.M. Scanlan and M.O. Senge]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Chemical synthesis and medicinal applications of glycoporphyrins', *Current Medicinal Chemistry*, 22, 19 (2015), 2238-2348 [C. Moylan, E.M. Scanlan and M.O. Senge]
- 'Pdots, a new type of nanoparticle, bind to mTHPC via their lipid modified surface and exhibit very high FRET efficiency between the core and the sensitizer', *Physical Chemistry Chemical Physics*, 17, 17 (2015), 11412-11422 [S. Haupt, I. Lazar, H. Weitman, M.O. Senge and B. Ehrenberg]
- 'Porphyrin substituent regiochemistry, conformation and packing - the case of 5,10-diphenylporphyrin', *Chemical Sciences*, 70, 2 (2015), 119-123 [M.O. Senge, K. Dahms, H. Holdt and A. Kelling]
- 'Highly strained tertiary sp³ scaffolds: synthesis of functionalized cubanes and exploration of their reactivity under Pd(II) catalysis', *Organometallics*, 34, 7 (2015), 1408-1414 [S. Plunkett, K.J. Flanagan, B. Twamley and M.O. Senge]
- 'Lead structures for applications in photodynamic therapy 6. Temoporphin anti-inflammatory conjugates to target the tumor microenvironment for in vitro PDT', *PLOS ONE*, 10, 5 (2015), <http://hdl.handle.net/2262/74522> [L. Rogers, N.N. Sergeeva, E. Paszko, G.M.F. Vaz and M.O. Senge]
- 'Organische Chemie 2014', *Nachrichten aus der Chemie*, 63 (2015), 266–305 [U. Beifuss, M. Lehmann and A. Krueger *et al*]
- 'How green is green chemistry? Chlorophylls as a bioresource from biorefineries and their commercial potential in medicine and photovoltaics', *Photochemical and Photobiological Sciences*, 14 (2015), 638–660 [A.A. Ryan and M.O. Senge]
- 'N-H hydrogen bonding in porphyrins - from conformational design to supramolecular chemistry', *ECS Transactions*, 66 (2015), 1–10 [M.O. Senge]
- 'Crystal structures of 2-furylbenzimidazoles with antiangiogenic inhibition of VEGF in cell line MCF-7', *Heterocycles*, 91 (2015), 1603–1613 [K.J. Flanagan, Y.M. Shaker, A. Temirak, H.I. El Diwani and M.O. Senge]
- 'Crystal structure of 4-(methoxycarbonyl)phenylboronic acid', *Acta Crystallographica*, E71 (2015), 1151–1143 [K.J. Flanagan and M.O. Senge]
- 'Specific drug formulation additives: revealing the impact of architecture and block length ratio', *Biomacromolecules*, 16 (2015), 3308–3312 [S. Wiczorek, T. Schwaar, M.O. Senge and H.G. Börner]
- 'Crystal structure of [5-*n*-butyl-10-(2,5-dimethoxyphenyl)-2,3,7,8,12,13,17,18-octaethyl porphyrinato]nickel(II)', *Acta Crystallographica*, E71 (2015), 1397–1400 [K.J. Flanagan, E.M. Mothi, L. Kötzner and M.O. Senge]
- 'Getting it right: 3D cell cultures for the assessment of photosensitizers for photodynamic therapy', *Future Medicinal Chemistry*, 7 (2015), 1957–1960 [M.O. Senge and S. Stafford]
- 'Conformational control of cofactors in nature - the influence of protein-induced macrocycle distortion on the biological function of tetrapyrroles', *Chemical Communications*, 51 (2015), 17031–17063 [M.O. Senge, S.A. MacGowan and J.M. O'Brien]
- Southern, John**, 'A one-pot synthesis of 3-nitrothiophene and 3-nitro-2-substituted thiophenes', *Tetrahedron*, 71, 28 (2015), 4598-4603 [N. McNabola, C.J. O'Connor, M.D. Roydhouse, M.D. Wall and J.M. Southern]
- Watson, Graeme**, 'The electronic structure of sulvanite structured semiconductors Cu₃MCh₄ (M = V, Nb, Ta; Ch = S, Se, Te): prospects for optoelectronic applications', *Journal of Materials Chemistry C*, 3, 47 (2015), 12236-12244 [A. Kehoe, D. Scanlon, D. Scanlon and G. Watson]
- 'Electronic and surface properties of Ga-doped In₂O₃ ceramics', *Applied Surface Science*, 349 (2015), 970-982 [A. Regoutz, R.G. Egdell, D.J. Morgan, R.G. Palgrave, H. Tellez, S.J. Skinner, D.J. Payne, G.W. Watson and D.O. Scanlon]

Recent publications – Faculty of Engineering, Mathematics and Science

Research student

Rezvani, Ehsan, 'Optimisation of copper catalyst by the addition of chromium for the chemical vapour deposition growth of monolayer graphene', *Carbon*, 95 (2015), 789-793 [E. Rezvani, T. Hallam, N. McEvoy, N.C.Berner and G.S.Duesberg]

School of Computer Science and Statistics

COMPUTER SYSTEMS

Barrett, Edmond, 'Water distribution network sectorization using structural graph partitioning and multiobjective optimization', *16th Conference on water distribution system analysis (WDSA)*, Bari, Italy (2014), <http://dx.doi.org/10.1016/j.proeng.2014.11.238> [S. Hajebi, S. Temate, S. Barrett, A. Clarke and S. Clarke]

'locoGP: improving performance by genetic programming java source code', *Genetic and evolutionary computation conference companion proceedings (GECCO)*, Madrid (2015), <http://dx.doi.org/10.1145/2739482.2768419> [B. Cody-Kenny, E. Galvan-Lopez and S. Barrett]

Bouroche, Melanie, 'Towards evaluating the benefits of inter-vehicle coordination', *18th International IEEE conference on intelligent transportation systems (ITSC)*, Las Palmas de Gran Canaria, Spain (2015), <http://hdl.handle.net/2262/74805> [N. O'Hara, M. Slot, J. Monteil, V. Cahill and M. Bourouche]

Cahill, Vinny, 'Towards evaluating the benefits of inter-vehicle coordination', *18th International IEEE conference on intelligent transportation systems (ITSC)*, Las Palmas de Gran Canaria, Spain (2015), <http://hdl.handle.net/2262/74805> [N. O'Hara, M. Slot, J. Monteil, V. Cahill and M. Bourouche]

Clarke, Siobhan, 'Water distribution network sectorization using structural graph partitioning and multiobjective optimization', *16th Conference on water distribution system analysis (WDSA)*, Bari, Italy. (2014), <http://dx.doi.org/10.1016/j.proeng.2014.11.238> [S. Hajebi, S. Temate, S. Barrett, A. Clarke and S. Clarke]

'Towards decentralised detection of emergence in complex adaptive systems', *8th International IEEE conference on self-adaptive, self-organising systems (SASO)*, (2014), <http://dx.doi.org/10.1109/saso.2014.18> [E. O'Toole, V. Nallur and S. Clarke]

'A dynamic forecasting method for small scale residential electrical demand', *International joint conference on neural networks (IJCNN)*, (2014), <http://dx.doi.org/10.1109/ijcnn.2014.6889425> [A. Marinescu, I. Dusparic, C. Harris, V. Cahill and S. Clarke]

'Accelerating learning in multi-objective systems through transfer learning', *International joint conference on neural networks (IJCNN)*, (2014), <http://dx.doi.org/10.1109/ijcnn.2014.6889438> [A. Taylor, I. Dusparic, E. Galván-López, S. Clarke and V. Cahill]

'An analysis of decision-making techniques in dynamic, self-adaptive systems', *Self-adaptive and self-organising systems workshops (SASOW)*, (2014), <http://dx.doi.org/10.1109/sasow.2014.23> [P. Idziak and S. Clarke.]

'A dynamic service composition model for adaptive systems in mobile computing environments', *Service-oriented computing*, eds Xavier Franch, Aditya K. Ghose, Grace A. Lewis and Sami Bhiri (2014), http://dx.doi.org/10.1007/978-3-662-45391-9_7 [N. Chen and S. Clarke]

'Collaborative, parallel Monte Carlo tree search for autonomous electricity demand management', *Sustainable internet and ICT for sustainability (SustainIT)*, Madrid (2015), DOI: 10.1109/SustainIT.2015.7101360 [F. Golpayegani, I. Dusparic and S. Clarke]

Coghlan, Brian, 'Overview and evaluation of conceptual strategies for accessing CPU-dependent execution resources in grid infrastructures', *Computer Science Journal*, 16, 4 (2016), 373-393 [J. Walsh, J. Dukes, G. Pierantoni and B. Coghlan]

Recent publications – Faculty of Engineering, Mathematics and Science

Doherty, Gavin, 'In situ design for mental illness: considering the pathology of bipolar disorder in mHealth design', *17th International conference on human-computer interaction with mobile devices and services (MobileHCI)*, (2015), 86-97 [M. Matthews, S. Volda, S. Abdullah, G. Doherty, T. Choudhury, S. Im and G. Gay]

'A randomized controlled trial of an internet-delivered treatment: its potential as a low-intensity community intervention for adults with symptoms of depression', *Behaviour Research and Therapy*, 75 (2015), 20-31 [D. Richards, L. Timulak, E. O'Brien, C. Hayes, N. Viganò, J. Sharry and G. Doherty]

Dukes, Jonathan, 'Overview and evaluation of conceptual strategies for accessing CPU-dependent execution resources in grid infrastructures', *Computer Science Journal*, 16, 4 (2016), 373-393 [J. Walsh, J. Dukes, G. Pierantoni and Brian Coghlan]

'Application support for virtual GPGPUs in grid infrastructures', *IEEE 11th international Conference on e-Science (e-Science)*, Munich, (2015), 67-77 [J. Walsh and J. Dukes]

'GPGPU virtualisation with multi-API support using containers', *Euro-Par 2015: parallel processing workshops*, eds Sascha Hunold *et al*, Vienna, Springer International Publishing (2015), 802-812 [J. Walsh and J. Dukes]

Farrell, Stephen, 'Why pervasive monitoring is bad', *IEEE internet computing* 18, 4 (2014), 4-7 [S. Farrell]

Galvan-Lopez, Edgar, 'locoGP: Improving performance by genetic programming java source code', *Genetic and evolutionary computation conference companion proceedings (GECCO)*, (2015), <http://dx.doi.org/10.1145/2739482.2768419> [B. Cody-Kenny, E. Galvan-Lopez and S. Barrett]

Haahr, Mads, 'Literary play: locative game mechanics and narrative techniques for cultural heritage', *Serious Games*, eds Stefan Göbel, Minhua Ma, Jannicke Baalsrud Hauge, Manuel Fradinho Oliveira, Josef Wiemeyer, Viktor Wendel, Huddersfield, Springer (2015), 114-119 [M. Haahr]

Leith, Douglas, 'Frames in outdoor 802.11 WLANs provide a hybrid binary-symmetric/packet-erasure channel', *IEEE international conference on communications (ICC)* (2015), <http://dx.doi.org/10.1109/icc.2015.7249299> [X. Chen and D. Leith]

'Max-weight revisited: sequences of nonconvex optimizations solving convex optimizations', *IEEE/ACM trans. on networking* (2015), 1 [V. Valls and D.J. Leith]

'Policing 802.11 MAC misbehaviours', *IEEE trans. on mobile comput.* (2015), 1 [P. Patras, H. Feghhi, D. Malone and D. Leith]

'A coded generalization of selective repeat ARQ', *IEEE conference on computer communications (INFOCOM)* (2015), 1-10, <http://dx.doi.org/10.1109/infocom.2015.7218601> [J. Cloud, D. Leith and M. Medard]

'Rigorous and practical proportional-fair allocation for multi-rate Wi-Fi', *Ad Hoc Networks*, 36 (2016), 21-34 [P. Patras, A. Garcia-Saavedra, D. Malone and D.J. Leith]

'Tilt angle adaptation in LTE networks with advanced interference mitigation', *IEEE 25th annual international symposium on personal, indoor, and mobile radio communication (PIMRC)* (2014), <http://dx.doi.org/10.1109/pimrc.2014.7136492> [B. Partov, D.J. Leith and R. Razavi]

'Differential privacy in metric spaces: numerical, categorical and functional data under the one roof', *Information Sciences*, 305 (2015), 256-268 [N. Holohan, D.J. Leith and O. Mason]

'Coexistence of WiFi and LTE in unlicensed bands: a proportional fair allocation scheme', *IEEE international conference on communication workshop (ICCW)* (2015), <http://dx.doi.org/10.1109/iccw.2015.7247522> [C. Cano and D.J. Leith]

'Corrupted frames in outdoor 802.11 WLANs provide a hybrid BSC/packet erasure channel', *IEEE international conference on communications (ICC)* (2015), <http://dx.doi.org/10.1109/icc.2015.7249299> [X. Chen and D.J. Leith]

Recent publications – Faculty of Engineering, Mathematics and Science

'Dynamic idle mode control in small cell networks', *IEEE international conference on communications (ICC)* (2015), <http://dx.doi.org/10.1109/icc.2015.7248319> [B. Partov, D.J. Leith, R. Razavi and H. Clausen]

'Optimization-based linear network coding for general connections of continuous flows', *IEEE international conference on communications (ICC)* (2015), <http://dx.doi.org/10.1109/icc.2015.7249030> [Y. Cui, M. Medard, E. Yeh and D.J. Leith]

Matthews, Mark, 'In situ design for mental illness: considering the pathology of bipolar disorder in mHealth design', *17th International conference on human-computer interaction with mobile devices and services (MobileHCI)*, (2015), 86-97 [M. Matthews, S. Voida, S. Abdullah, G. Doherty, T. Choudhury, S. Im and G. Gay]

McGoldrick, Ciaran, 'Policy-based non-interactive outsourcing of computation using multikey FHE and CP-ABE', *Progress in cryptography*, eds Grizalis, Dimitris, Kiayias, Aggelos, Askoxylakis, Ioannis, Switzerland, Springer International Publishing (2014), 377-397 [M. Clear and C. McGoldrick]

'Multi-identity and multi-key leveled FHE from learning with errors', *Advances in cryptology (CRYPTO)*, eds Gennaro, Rosario, Robshaw, Matthew, Heidelberg, Springer-Verlag (2015), 630-656 [M. Clear and C. McGoldrick]

Monteil, Julien, 'Towards evaluating the benefits of inter-vehicle coordination', *18th IEEE international conference on intelligent transportation systems*, Las Palmas de Gran Canaria, Spain (2015), <http://hdl.handle.net/2262/74805> [N. O'Hara, M. Slot, J. Monteil, V. Cahill and M. Bourroche]

Nallur, Vivek, 'Towards decentralised detection of emergence in complex adaptive systems', *8th IEEE international conference on self-adaptive, self-organising systems (SASO)*, (2014), <http://dx.doi.org/10.1109/saso.2014.18> [E. O'Toole, V. Nallur and S. Clarke]

'Smart route planning using open data and participatory sensing', *IFIP Advances in Information and Communication Technology*, 451 (2015), 91-100 [V. Nallur, A. Elgammal and S. Clarke]

'It's good to be different: diversity, heterogeneity, and dynamics in collective systems', *IEEE 8th international conference on self-adaptive and self-organizing systems workshops (SASOW)* (2014), 84-89 [P.R. Lewis, H. Goldingay and V. Nallur]

'On architectural diversity of dynamic adaptive systems', *International conference on software engineering*, 2 (2015), 595-598 [H. Song, A. Elgammal, V. Nallur, F. Chauvel, F. Fleurey and S. Clarke]

O'Mahony, Donal, 'Nihil: computing clouds with zero emissions', *IEEE international conference on cloud engineering*, Boston, MA (2014), <http://dx.doi.org/10.1109/ic2e.2014.65> [J. Doyle and D. O'Mahony]

'SAVANT: a framework for supporting content accountability in information centric networks', *10th International conference on heterogeneous networking for quality, reliability, security and robustness (QSHINE)*, (2014), 188-190 [D.O. Coileain and D. O'Mahony]

'SAVANT: aggregated feedback and accountability framework for named data networking', *1st International conference on information-centric networking* (2014), 187-188 [D.Ó. Coileáin and D. O'Mahony]

O Nuallain, Eamonn, 'Netcoin - a traceable P2P electronic cash system', *IEEE ICWS*, New York (2015), <http://hdl.handle.net/2262/75231> [H. Tewari and E. ONuallain]

Ruffini, Marco, 'Independent transient plane design for protection in openflow-based networks', *Journal of Optical Communications and Networking*, 7, 4 (2015), 264-275 [N. Kitsuan, S. McGettrick, F. Slyne, D.B. Payne and M. Ruffini]

'Software defined networking for next generation converged metro-access networks', *Optical Fibre Technology*, 26 (2015), <http://dx.doi.org/10.1016/j.yofte.2015.08.008> [M. Ruffini, F. Slyne, C. Bluemm, N. Kitsuan and S. McGettrick]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Cache storage optimization for locality-aware peer-to-peer multimedia distribution', *International conference on communications*, London (2015), 1-6 [E. Di Pascale and M. Ruffini]
- 'The need for a control orchestration protocol in research projects on optical networking', *European conference on networks and communications (EuCNC)* (2015), 340-344 [R. Vilalta, V. Lopez, A. Mayoral *et al*]
- 'Protection design for minimizing OLTs in resilient dual-homed long-reach passive optical network', *Journal of Optical Communications and Networking*, 8, 2 (2016), 93-99 [A. Nag, D. B. Payne, and M. Ruffini]
- 'Experimental end-to-end demonstration of shared N:1 dual homed protection in long reach PON and SDN-controlled core', *Optical Fibre Communications*, Los Angeles (2015), 1-3 [S. McGettrick, F. Slyne, N. Kitsuwon, D.B. Payne and M. Ruffini]
- 'Evaluating dynamic bandwidth allocation of virtualised passive optical networks over mobile traffic traces', *Journal of Optical Communications and Networking*, 8, 3 (2016), 129-136 [P. Alvarez, N. Marchetti and M. Ruffini]
- Tewari, Hitesh*, 'Netcoin - a traceable P2P electronic cash system', *IEEE ICWS*, New York (2015), <http://hdl.handle.net/2262/75231> [H. Tewari and E. ONuallain]
- Waldron, John*, 'Code walk through as an educational methodology - a smart phone architecture case study', *International conference on innovations in intelligent systems and computing technologies (ICIISCT)*, Las Pinas, Manila (2016), 11-14 [J. T. Waldron]
- Weber, Stefan*, 'Exploring content popularity in information-centric networks', *China Communications*, 12, 7 (2015), 13-22 [A. Ioannou and S. Weber]
- 'Qualitative comparison of open-source SDN controllers', *15th IEEE/IFIP network operations and management symposium (NOMS)*, Istanbul, Turkey (2016), 6 [A. Bondkovskii, J. Keeney, S. van der Meer and S. Weber]

INFORMATION SYSTEMS

- Bannister, Frank*, 'Open data licensing: more than meets the eye', *Information Polity*, 20, 4 (2015), 231-251 [M. Khayyat and F. Bannister]
- 'When innovation stumbles: applying Sauer's failure model to the Flemish road signs database project', *International Journal of Public Administration in the Digital Age*, 3, 1 (2016), 1-20 [L. Van Cauter, F. Bannister, J. Crompvoets and M. Snoek]
- Bresnihan, Nina*, 'A critique of the current trend to implement computing in schools', *Pedagogika*, 65, 3 (2015), 292-300 [N. Bresnihan, R. Millwood, E. Oldham, G. Strong and D. Wilson]
- 'Designing an after school computing programme for girls', *45th Annual conference frontiers in education (FIE)*, El Paso, USA (2015), 1-5 [K. Sullivan, J.R. Byrne, N. Bresnihan, K. O'Sullivan and B. Tangney]
- Fitzgibbon, Ann*, 'The programming studio: investigating teachers' readiness for teaching programming in the island of Ireland', *Association for teacher education in Europe (ATEE)*, eds L. Leite, M.A. Flores, L. Dourado, M. T. Vilaca and S. Morgado, Braga, Portugal (2015), 299-309 [P. Cowan, E. Oldham and A. FitzGibbon]
- Leahy, Denise*, 'The European e-competence framework: past, present and future', *IADIS International Journal on Computer Science and Information Systems*, 10, 1 (2015), 1-13 [D. Wilson, D. Leahy and D. Dolan]
- Millwood, Richard*, 'A critique of the current trend to implement computing in schools', *Pedagogika*, 65, 3 (2015), 292-300 [N. Bresnihan, R. Millwood, E. Oldham, G. Strong and D. Wilson]

Recent publications – Faculty of Engineering, Mathematics and Science

- Tangney, Brendan, 'An exploratory case study into the adaption of the Bridge21 model for 21st century learning in Irish classrooms', *Shaping our future: how the lessons of the past can shape educational transformation*, eds Butler, D., Marshall, K., Leahy, M., Dublin, Liffey Press (2015), 348-381 [C. Conneely, C. Girvan, J. Lawlor and B. Tangney,]
- 'Bridge21 - exploring the potential to foster intrinsic student motivation through a team-based, technology mediated learning model', *Technology, Pedagogy and Education* (2015), 1-20 [J. Lawlor, K. Marshall and B. Tangney]
- 'Learning circles: a collaborative technology-mediated peer teaching workshop', *Journal of Information Technology Education: Innovations in Practice*, 14 (2015), 63-83 [K. Sullivan, K. Marshall and B. Tangney]
- 'Exploring teacher reactions towards a 21st century teaching and learning approach to continuing professional development programme in computer science', *7th International conference on computer supported education (CSEDU)*, Lisbon, Portugal (2015), 22-31 [L. Fisher, J. Rowan Byrne and B. Tangney]
- 'Barbie bungee jumping, technology and contextual learning of mathematics', *6th International conference on computer supported education (CSEDU)* (2014), 206-213 [A. Bray and B. Tangney]
- 'Computer science teacher reactions towards raspberry pi continuing professional development (CPD) workshops using the Bridge21 model', *10th International conference on computer science and education (ICCSE)*, Cambridge, UK (2015), 267-272 [J.R. Byrne, L. Fisher and B. Tangney]
- 'CodePlus - designing an after school computing programme for girls', *45th Annual conference frontiers in education (FIE)*, El Paso, USA (2015), 5 [K. Sullivan, J.R. Byrne, N. Bresnihan, K. O'Sullivan and B. Tangney]
- 'Empowering teachers to teach computer science - a social constructivist approach using the Bridge21 model for CS CPD', *45th Annual conference frontiers in education (FIE)*, El Paso, USA, (2015), 9 [J.R. Byrne, L. Fisher and B. Tangney]
- 'Enhancing student engagement through the affordances of mobile technology: a 21st Century learning perspective on realistic mathematics education', *Mathematics Education Research Journal* (2015), 25 [A. Bray and B. Tangney]
- 'The alignment of CMC language learning methodologies with the Bridge21 model of 21C learning', *European conference on computer assisted language learning (EUROCALL)*, eds F. Helm et al, Italy, Research-publishing.net (2015), 44-50 [C. Bauer, A. Devitt and B. Tangney]
- 'Technology-mediated realistic mathematics education and the Bridge21 model: a teaching experiment', *9th Congress of European research in mathematics education*, eds Konrad Krainer and Nada Vondrová, Prague, Czech Republic, Charles University in Prague, Faculty of Education and ERME (2015), 2487-2494 [A. Bray, E. Oldham and B. Tangney]
- 'A 21st century teaching and learning approach to computer science education: teacher reactions', *Computer supported education*, eds S. Zvacek, M. T. Restivo, J. Uhomobhi and M. Helfert, Springer International Publishing (2016), 523-540 [J.R. Byrne, L. Fisher and B. Tangney]
- 'Constructionism and microworlds as part of a 21st century learning activity to impact student engagement and confidence in physics', *Constructionism*, eds Spitakiat A. and Tutyaphuengprasert N., Bangkok, Suksapattana Foundation (2016), 34-43 [C. Wickham, C. Girvan and B. Tangney]
- Wilson, Diana, 'The European eCompetence framework: past, present and future', *International Journal on Computer Science and Information Systems*, 10, 1 (2015), 1-13 [D. Wilson, D. Leahy and D. Dolan]
- 'A critique of the current trend to implement computing in schools', *Pedagogika*, 65, 3 (2015), 292-300 [N. Bresnihan, R. Millwood, E. Oldham, G. Strong and D. Wilson]

Recent publications – Faculty of Engineering, Mathematics and Science

INTELLIGENT SYSTEMS

Ahmad, Khurshid, 'A computational account of investor behaviour in Chinese and US markets', *International Journal of Economic Behavior and Organization*, 3 (2015), 78-84 [Z. Zhao and K. Ahmad]

Arnedillo-Sanchez, Inmaculada, 'AutoBlocks: using collaborative learning to develop joint attention skills for children with autism spectrum disorder', *11th International conference on computer supported collaborative learning (CSCL)*, eds Oskar Lindwall, Päivi Häkkinen, Timothy Koschmann, Pierre Tchounikine and Sten Ludvigsen, Gothenburgh, Sweden, ISLS (2015), 529-532 [B. Boyle, I. Arnedillo-Sanchez, A. Zahid]

'Towards supporting communication in relationship and sexuality education through a VLE', *12th International conference on cognition and exploratory learning in digital age (CELDA)*, eds D.G. Sampson, J.M. Spector, D. Ifenthaler and P. Isaias, Maynooth, Dublin, Ireland, IADIS (2015), 253-256 [M. Mc Ginn and I. Arnedillo-Sánchez]

'Developing adolescents' resistance to sexual coercion through role-playing activities in a virtual world', *12th International conference on cognition and exploratory learning in digital age (CELDA)*, eds D.G. Sampson, J.M. Spector, D. Ifenthaler and P. Isaias Maynooth, Dublin, Ireland, IADIS (2015), 275-278 [M. Mc Ginn and I. Arnedillo-Sánchez]

'Sensorimotor distractions when learning with mobile phones on-the-move', *Mobile Learning*, eds I. Arnedillo-Sánchez and P. Isaias, Vilamoura, Portugal, IADIS (2016), 89-93 [S. Castellano and I. Arnedillo-Sánchez]

'What do I need to learn? An exercise to prioritize learning goals', *Global Learn*, Limerick, Ireland, Association for the Advancement of Computing in Education (AACE) (2016), 203-207 [S. Gauthier and I. Arnedillo-Sánchez]

'Capturing mobile learning in context', *Global Learn*, Limerick, Ireland, Association for the Advancement of Computing in Education (AACE) (2016), 429-434 [C. Tseloudi and I. Arnedillo-Sánchez]

'Exploring the role of adults in participatory design for children on the autism spectrum', *Design, user experience, and usability: design thinking and methods*, ed. A. Marcus, Switzerland, Springer International Publishing (2016), 1-10 [B. Boyle and I. Arnedillo-Sánchez]

Bozic, Bojan, 'Describing reasoning results with RVO, the reasoning violations ontology', *3rd Workshop on linked data quality workshop*, Heraklion, Greece, Springer Verlag (2016), <http://hdl.handle.net/2262/76241> [B. Bozic, R. Brennan, K. Feeney and G. Mendel-Gleason]

Brennan, Rob, 'Seshat: the global history databank', *Cliodynamics: The Journal of Quantitative History and Cultural Evolution*, 6, 1 (2015), 77-107 [P. Turchin, R. Brennan, T. Currie, et al]

'Ontology consistency and instance checking for real world linked data', *2nd Workshop on linked data quality*, eds A. Rula, A. Zaveri, M. Knuth and D. Kontokostas, Slovenia (2015), 1-1 [G. Mendel-Gleason, K. Feeney and R. Brennan]

'Describing reasoning results with RVO, the reasoning violations ontology', *3rd Workshop on linked data quality (LDQ)*, Heraklion, Greece, Springer Verlag (2016), <http://hdl.handle.net/2262/76241> [B. Bozic, R. Brennan, K. Feeney and G. Mendel-Gleason]

Cabral, Joao Paulo, 'Text summarization and speech synthesis for the automated generation of personalized audio presentations', *20th International conference on application of natural language to information systems (NLDB)*, Passau, Germany, Springer (2015), 307-320 [S. Lawless, P. Lavin, M. Bayomi, J.P. Cabral and M.R. Ghorab]

'Audio features for the classification of engagement', *Workshop on engagement in social intelligent virtual agents*, Delft, Netherlands (2015), 8-12 [E. Christy, J.P. Cabral and N. Campbell]

Recent publications – Faculty of Engineering, Mathematics and Science

- Campbell, Nick**, 'The discourse value of social signals at topic change moments', *16th Annual conference of the international speech communication association (INTERSPEECH)*, Dresden, Germany (2015), 1967-1971 [F. Bonin, N. Campbell and C. Vogel]
- 'From multimodal analysis to real-time interactions with virtual agents', *Journal on Multimodal User Interfaces*, 8, 1 (2014), 1-3 [R. Poppe, R. Böck, F. Bonin, N. Campbell, I. de Kok and D. Traum]
- 'Interaction and affect', *Computational Audio Analysis*, Germany (2014), <http://dx.doi.org/10.4230/DagRep.3.11.1> [M. Heckmann, M. Bulut, C. Busso, N. Campbell, L. Devillers, A. Esposito, S. Lee, R. Moore, M. Sandler, K. Truong and R. Singh]
- 'Emotional speech synthesis', *The Oxford handbook of affective computing*, eds R. Calvo, S. D'Mello, J. Gratch, and A. Kappas, Oxford, Oxford University Publishing (2015), 223-227 [F. Burkhardt and N. Campbell]
- Conlan, Owen**, 'Revolutionary identities: turning data in knowledge to drive personalized exploration of the Irish rising of 1916', *IEEE Big Data*, Washington D.C. (2014), <http://dx.doi.org/10.1109/bigdata.2014.7004450> [O. Conlan, A. O'Connor, Ó. Ní Loinsigh, G. Munnelly, S. Lawless and R. Murphy]
- Dawson-Howe, Kenneth**, 'An extensive evaluation of mean-shift tracking for surveillance', *International Journal of Imaging and Robotics*, 15, 2 (2015), 1-21 [D. Caulfield and K. Dawson-Howe]
- Irish machine vision and image processing (IMVIP)*, eds R. Dahyot, G. Lacey, K. Dawson-Howe, F. Pitié and D. Moloney, Dublin, Irish Pattern Recognition and Classification Society (2015), 1-139
- Debruyne, Christophe**, 'Towards an adaptive tool and method for collaborative ontology mapping', *On the move to meaningful internet systems: OTM 2015 workshops*, eds Ioana Ciuciu, Hervé Panetto, Christophe Debruyne, Alexis Aubry, Peter Bollen, Rafael Valencia-García, Alok Mishra, Anna Fensel, and Fernando Ferri, Rhodes, Greece, Springer (2015), 319-328 [R. Shosha, C. Debruyne and D. O'Sullivan]
- 'Creating and consuming metadata from transcribed historical vital records for ingestion in a long-term digital preservation platform', *On the move to meaningful internet systems: OTM 2015 workshops*, eds Ioana Ciuciu, Hervé Panetto, Christophe Debruyne, Alexis Aubry, Peter Bollen, Rafael Valencia-García, Alok Mishra, Anna Fensel, and Fernando Ferri, Rhodes, Greece, Springer (2015), 445-450 [D. Grant, C. Debruyne, R. Grant and S. Collins]
- 'Towards a project centric metadata model and lifecycle for ontology mapping governance', *17th International conference on information integration and web-based applications and services (iiWAS)*, eds Maria Indrawan-Santiago, Matthias Steinbauer, A Min Tjoa, Ismail Khalil and Gabriele Anderst-Kotsis, Brussels, Belgium, ACM (2015), 356-365 [C. Debruyne, B. Walshe and D. O'Sullivan]
- Dingliana, John**, 'Temporal coherence predictor for time varying volume data based on perceptual functions', *20th International symposium on vision, modeling and visualization (VMV)*, eds D. Bommes, T. Ritschel, and T. Schultz, Aachen, Germany (2015), <http://hdl.handle.net/2262/74596> [T. Noonan, L. Campoalegre and J. Dingliana]
- 'DAVIS: density-adaptive synthetic-vision based steering for virtual crowds', *ACM SIGGRAPH conference on motion in games*, Paris, France (2015), 79-84 [R. Hughes, J. Ondrej and J. Dingliana]
- Emms, Martin**, 'An unsupervised EM method to infer time variation in sense probabilities', *12th International conference on natural language processing (ICON)*, Trivandrum, India (2015), 266-271 [M. Emms and A. Jayapal]

Recent publications – Faculty of Engineering, Mathematics and Science

- Fatema, Kaniz**, 'Authorising contract based access to personal data in the cloud', *8th IEEE/ACM International conference on utility and cloud computing*, Limassol, Cyprus, IEEE (2015), 45-54 [K. Fatema, D. Lewis and D. O'Sullivan]
- Feeney, Kevin**, 'Seshat: the global history databank', *Clodynamics: The Journal of Quantitative History and Cultural Evolution*, 6, 1 (2015), 77-107 [P. Turchin, R. Brennan, T. Currie et al]
'Ontology consistency and instance checking for real world linked data', *2nd Workshop on linked data quality (LDQ)*, eds Anisa Rula, Amrapali Zaveri, Magnus Knuth and Dimitris Kontokostas, Slovenia (2015), 1-1 [G. Mendel-Gleason, K. Feeney and R. Brennan]
'Describing reasoning results with RVO, the reasoning violations ontology', *3rd Workshop on linked data quality (LDQ)*, Heraklion, Greece, Springer Verlag (2016), <http://hdl.handle.net/2262/76241> [B. Bozic, R. Brennan, K. Feeney, G. Mendel-Gleason]
- Fernando, Tim**, 'Between the event calculus and finite state temporality', *20th Conference on formal grammar*, eds Annie Foret, Glyn Morrill, Reinhard Muskens and Rainer Osswald, Barcelona (2015), 107-121 [D. Kelleher, T. Fernando and C. Vogel]
'On regular languages over power sets', *Journal of Language Modelling*, 4, 1 (2016), 29-56 [T. Fernando]
'The semantics of tense and aspect: a finite-state perspective', *The handbook of contemporary semantic theory*, eds S. Lappin and C. Fox, Wiley (2015), 203-236 [T. Fernando]
'Negation and events as truthmakers', *20th Amsterdam colloquium*, University of Amsterdam (2015), 109-118 [T. Fernando]
'Two perspectives on change and institutions', *Formal ontologies for artificial intelligence*, eds O. Papini et al, Buenos Aires, CEUR-WS.org (2015), 8 [T. Fernando]
- Hederman, Lucy**, 'Implementing mHealth in low and middle-income countries: what should program implementers consider?', *Mobile health (mHealth): multidisciplinary verticals*, ed. Sasan Adibi, Springer (2015), 257-273 [P.J. Wall, F. Vallières, E. McAuliffe, D. Lewis and L. Hederman]
'A business analytics software tool for monitoring and predicting radiology throughput performance', *Journal of Digital Imaging* (2016), <http://dx.doi.org/10.1007/s10278-016-9871-3> [S. Jones, S. Cournane, N. Sheehy and L. Hederman]
- Lacey, Gerard**, 'Conference proceedings', *Irish machine vision and image processing (IMVIP)*, eds Rózena Dahyot, Gerard Lacey, Kenneth Dawson-Howe, François Pitié and David Moloney, Irish Pattern Recognition and Classification Society (ISBN 978-0-9934207-0-2) (2015), 1-139
'Efficacy of a new educational tool to improve handrubbing technique amongst healthcare workers: a controlled, before-after study', *PLOS ONE*, 9, 9 (2014), e105866 [A.J. Stewardson, A. Iten, V. Camus, A. Gayet-Ageron, D. Caulfield, G. Lacey and D. Pittet]
- Lavin, Peter**, 'Text summarization and speech synthesis for the automated generation of personalized audio presentations', *20th International conference on application of natural language to information systems (NLDB)*, Passau, Germany, Springer (2015), 307-320 [S. Lawless, P. Lavin, M. Bayomi, J.P. Cabral and M.R. Ghorab]
- Lawless, Seamus**, 'Revolutionary identities: turning data in knowledge to drive personalized exploration of the Irish rising of 1916', *IEEE Big Data*, Washington D.C. (2014), <http://dx.doi.org/10.1109/bigdata.2014.7004450> [O. Conlan, A. O'Connor, O. Ní Loinsigh, G. Munnely, S. Lawless and R. Murphy]
'Towards personalized multilingual information access - exploring the browsing and search behavior of multilingual users', *22nd Conference on user modelling, adaptation and personalization (UMAP)*, Aalborg, Denmark (2014), http://dx.doi.org/10.1007/978-3-319-08786-3_39 [B. Steichen, M.R. Ghorab, A. O'Connor, S. Lawless and V. Wade]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Text summarization and speech synthesis for the automated generation of personalized audio presentations', *20th International conference on application of natural language to information systems (NLDB)*, Passau, Germany, Springer (2015), 307-320 [S. Lawless, P. Lavin, M. Bayomi, J.P. Cabral and M.R. Ghorab]
- 'Tailoring access to content', *New Companion to Digital Humanities*, eds Susan Schreibman, Ray Siemens and John Unsworth, Wiley-Blackwell (2016), 171-184 [S. Lawless, O. Conlan and C. Hampson]
- 'A review of personalised e-learning: towards supporting learner diversity', *International Journal of Distance Education Technologies*, 13, 1 (2015), 22-47 [E. O'Donnell, M. Sharp, S. Lawless and V. Wade]
- Lewis, David**, 'Implementing mHealth in low and middle-income countries: what should program implementers consider?', *Mobile health (mHealth): multidisciplinary verticals*, ed. Sasan Adibi, Springer (2015), 257-273 [P.J. Wall, F. Vallières, E. McAuliffe, D. Lewis and L. Hederman]
- 'Authorising contract based access to personal data in the cloud', *2nd International workshop on trust in cloud computing (IWTCC)*, Limassol, Cyprus, IEEE (2015), 45-54 [K.Fatema, D. Lewis and D. O'Sullivan]
- 'Using visual analytics to support online community development', *International Journal of Web Based Communities*, 12, 1 (2016), 3-22 [J. McAuley and D. Lewis]
- 'Towards a CAT tool agnostic standard for user activity data', *The International Journal of Localisation*, 14, 2 (2015), 56-61 [J. Moran and D. Lewis]
- 'Open, web-based internationalization and localization tools', *Translation Spaces*, 3, 1 (2014), 99-132 [D. Lewis, Q. Lui, L. Finn, C. Hokamp, F. Sasaki and D. Filip]
- 'An empirical study of segment prioritization for incrementally retrained post-editing-based SMT', *15th Machine translation summit*, Miami, Florida (2015), 172-185 [J. Du, A. Srivastava, A. Way, A. Maldonado-Guerra and D. Lewis]
- Luz, Saturnino**, 'Clinical training and teamwork: learning and feedback', *28th International symposium on computer-based medical systems*, São Carlos, Brazil, IEEE (2015), 280-285 [B. Kane and S. Luz]
- Maldonado Guerra, Alfredo**, 'An empirical study of segment prioritization for incrementally retrained post-editing-based SMT', *15th Machine translation summit*, Miami, Florida (2015), 172-185 [J. Du, A. Srivastava, A. Way, A. Maldonado-Guerra and D. Lewis]
- O'Keeffe, Ian**, 'AMASE: a framework for supporting personalised activity-based learning on the web', *Computer Science and Information Systems*, 11, 1 (2014), 343-367 [A. Staikopoulos, I. O'Keeffe, R. Rafter, E. Walsh, B. Yousuf, O. Conlan and V. Wade]
- O'Sullivan, Carol**, 'Strutting hero, sneaking villain: utilizing body motion cues to predict the intentions of others', *ACM Transactions on Applied Perception*, 13, 1 (2015), 1-21 [H. Kiiski, L. Hoyet, A.T. Woods, C. O'Sullivan and F.N. Newell]
- 'The perception of lighting inconsistencies in composite outdoor scenes', *ACM Transactions on Applied Perception*, 12, 4 (2015), 18:1-18:18 [M. Tan, J. Lalonde, L. Sharan, H. Rushmeier and C. O'Sullivan]
- 'Eye-tracktive: measuring attention to body parts when judging human motions', *Eurographics* (2015), 37-40 [C. Ennis, L. Hoyet and C. O'Sullivan]
- 'Auditory-visual virtual environment for the treatment of fear of crowds', *Laval virtual (VRIC)* (2015), 1-3 [M. Taffou, J. Ondrej, C. O'Sullivan, O. Warusfel, S. Dubal and I. Viaud-Delmon]
- 'Stereo from shading', *Eurographics symposium on rendering (EGSR)*, Dublin (2015), 1-5 [A. Chapiro, C. O'Sullivan, W. Jarosz, M. Gross and A. Smolic]
- 'Sackcloth or silk?: the impact of appearance vs dynamics on the perception of animated cloth', *ACM SIGGRAPH symposium on applied perception*, Tübingen, Germany (2015), 41-46 [C. Aliaga, C. O'Sullivan, D. Gutierrez and R. Tamstorf]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Push-recovery stability of biped locomotion', *ACM Transactions on Graphics (TOG)*, 34, 6 (2015), 180:1-180:10 [Y. Lee, K. Lee, S. Kwon, J. Jeong, C. O'Sullivan, M.S. Park and J. Lee]
- 'Perceptual evaluation of cardboarding in 3D content visualization', *ACM symposium on applied perception (SAP)*, Anaheim, USA, (2014), 47-50 [A. Chapiro, O. Diamanti, S. Poulakos, C. O'Sullivan, A. Smolic and M. Gross]
- 'Generating and ranking diverse multi-character interactions', *ACM Transactions on Graphics (TOG)*, 33, 6 (2014), 209:1-209:12 [J. Won, K. Lee, C. O'Sullivan, J.K. Hodgins and J. Lee]
- 'Familiar environments enhance object and spatial memory in both younger and older adults', *Experimental Brain Research* (2016), 1-20 [N.A. Merriman, J. Ondrej, E. Roudaia, C. O'Sullivan and F.N. Newell]
- 'Path patterns: analyzing and comparing real and simulated crowds', *20th ACM SIGGRAPH symposium on interactive 3D graphics and games (I3D)*, (2016), 49-57 [H. Wang, J. Ondrej and C. O'Sullivan]
- O'Sullivan, Declan**, 'MUCS'15', *12th IEEE international workshop on managing ubiquitous communications and services (MUCS)*, eds Declan O'Sullivan, Burkhard Stiller, Tom Pfeifer, Nicholas Race and Christine Julien, Saint Louis, USA (2015), 1-68
- 'Towards an adaptive tool and method for collaborative ontology mapping', *On the move to meaningful internet systems: OTM 2015 workshops*, eds Ioana Ciuciu, Hervé Panetto, Christophe Debruyne *et al*, Rhodes, Greece, Springer (2015), 319-328 [R. Shosha, C. Debruyne, and D. O'Sullivan]
- 'Towards a project centric metadata model and lifecycle for ontology mapping governance', *17th International conference on information integration and web-based applications and services (iiWAS)*, eds M. Indrawan-Santiago, M. Steinbauer, A. Min Tjoa, I. Khalil and G. Anderst-Kotsis, Brussels, Belgium, ACM (2015), 356-365 [C. Debruyne, B. Walshe and D. O'Sullivan]
- 'Authorising contract based access to personal data in the cloud', *2nd International workshop on trust in cloud computing (IWTCC)*, Limassol, Cyprus, IEEE (2015), 45-54 [K. Fatema, D. Lewis and D. O'Sullivan]
- 'Enhanced faceted browsing of a WW1 dataset through ontology alignment', *17th International conference on information integration and web-based applications and services (iiWAS 2015)*, Brussels, Belgium, ACM (2015), 70-77 [A. Crotti Junior, B. Walshe and D. O'Sullivan]
- 'Bridging the gap between machine learning researchers and practitioners', *1st International conference on big data intelligence and computing (DataCom)*, Chengdu, China, IEEE (2015), 51-58 [H. Assem and D. O'Sullivan]
- 'Towards composite semantic reasoning for realtime network management data enrichment', *11th International conference on network and service management (CNSM)*, Barcelona, Spain, IFIP (2015), 182-186 [J. Keeney, L. Fallon, W. Tai and D. O'Sullivan]
- Peirce, Neil**, 'Using game elements to make studying more engaging', *European conference on game based learning*, eds Robin Munkvold and Line Kolås, Steinkjer, Norway (2015), 423-430 [D. O Broin, N. Peirce, T. Cassells and K. Power]
- 'Usability of educational technology APIs: findings and guidelines', *Learning and Collaboration Technologies*, eds P. Zaphiris and A. Ioannou, Los Angeles, CA, Springer International Publishing (2015), 249-260 [E. Kapros and N. Peirce]
- Shevlin, Fergal**, 'Beam quality-preserving speckle reduction for scanned laser displays', *Laser display and lighting conference (LDC)*, eds Sunao Kurimura, Tetsuya Yagi and Chang-Qing Xu, Yokohama, Japan, The Japanese Society of Applied Physics (2015), 2 [F. Shevlin]
- 'Optically efficient homogenisation of laser illumination', *International display workshops (IDW)*, Otsu, Japan (2015), 3 [F. Shevlin]

Recent publications – Faculty of Engineering, Mathematics and Science

Staikopoulos, Athanasios, 'AMASE: a framework for supporting personalised activity-based learning on the web', *Computer Science and Information Systems*, 11, 1 (2014), 343-367 [A. Staikopoulos, I. O'Keeffe, R. Rafter, E. Walsh, B. Yousuf, O. Conlan and V. Wade]

Vogel, Carl, 'Between the event calculus and finite state temporality', *20th Conference on formal grammar*, eds Annie Foret, Glyn Morrill, Reinhard Muskens and Rainer Osswald, Barcelona, (2015), 107-121 [D. Kelleher, T. Fernando and C. Vogel]

'The discourse value of social signals at topic change moments', *16th Annual conference of the international speech communication association (INTERSPEECH)*, Dresden, Germany (2015), 1967-1971 [F. Bonin, N. Campbell and C. Vogel]

'Author verification: basic stacked generalization applied to predictions from a set of heterogeneous learners', *Notebook for PAN at CLEF*, eds Efsthios Stamatatos, Martin Potthast, Francisco Rangel, Paolo Rosso and Benno Stein, Toulouse, France (2015), <http://hdl.handle.net/2262/74580> [E. Moreau, A. Jayapal, G. Lynch and C. Vogel]

'Stylochronometry: timeline prediction in stylometric analysis', *Research and development in intelligent systems XXXII*, eds Max Bramer and Miltos Petridis, London, Springer (2015), 91-106 [C. Klaussner and C. Vogel]

Internet research methods, London, SAGE Publications (2016), 222+viii [C. Hewson, C. Vogel and D. Laurent]

'Communication sequences and survival analysis', *Towards robotic socially believable behaving systems - volume II*, eds Esposito, Anna and Lakhmi C. Jain, Switzerland, Springer (2016), 47-59 [C. Vogel]

'Needs and challenges in human computer interaction for processing social emotional information', *Pattern Recognition Letters*, 66 (2015), 41-51 [A. Esposito and A.M. Esposito and C. Vogel]

'Proper methodologies for psychological and sociological experiments administered via Internet', *Researching society online, volume I: the social context of online research*, eds Matthew David and Peter Millward, Los Angeles, SAGE (2014), 105-115 [C. Hewson, and D. Laurent and C. Vogel]

Walsh, Eddie, 'AMASE: a framework for supporting personalised activity-based learning on the web', *Computer Science and Information Systems*, 11, 1 (2014), 343-367 [A. Staikopoulos, I. O'Keeffe, R. Rafter, E. Walsh, B. Yousuf, O. Conlan and V. Wade]

Research students

Doyle, Michael John, 'Adaptive BVH: an evaluation of an efficient shared data structure for interactive simulation', *30th Spring conference on computer graphics (SCCG)*, Smolenice, Slovakia, ACM (2014), 37-45 [C. Fowler, M.J. Doyle, and M. Manzke]

Kapros, Evangelos, 'Usability of educational technology APIs: findings and guidelines', *Learning and collaboration technologies*, eds P. Zaphiris and A. Ioannou, Switzerland, Springer International Publishing (2015), 249-260 [E. Kapros, N. Peirce]

SOFTWARE SYSTEMS

Gregg, David, 'Automatic vectorization of interleaved data revisited', *ACM Transactions on Architecture and Code Optimization*, 12, 4 (2015), 50 [A. Anderson, A. Malik and D. Gregg]

'An evaluation of the suitability of the Movidius Myriad architecture for scientific computing', *IEEE Micro*, 35, 1 (2015), 6-14 [M. Horea Ionica and D. Gregg]

'An improved simulated annealing heuristic for static partitioning of task graphs onto heterogeneous architectures', *20th IEEE international conference on parallel and distributed systems (ICPADS)*, Hsinchu Taiwan (2014), 95-102 [A. Vasudevan, A. Malik and D. Gregg]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'An evaluation of space and graph-partitioning methods for distributed road network simulations', *Winter simulation conference*, eds. A. Tolk, S. Y. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller, Savannah, GA, IEEE (2014), 4107-4108 [A. Vasudevan, Q. Bragard, A. Ventresque, L. Murphy and D. Gregg]
- Hennessy, Matthew*, 'Bisimulations for communicating transactions (extended abstract)', *Foundations of software science and computation structures*, ed. Muscholl, Anca, Grenoble, France, Springer Berlin Heidelberg (2014), 320-334 [V. Koutavas and C. Spaccasassi and M. Hennessy]
- Strong, Glenn*, 'A critique of the current trend to implement computing in schools', *Pedagogika*, 65, 3 (2015), 292-300 [N. Bresnihan, R. Millwood, E. Oldham, G. Strong and D. Wilson]
- STATISTICS
- Dahyot, Rozenn*, 'An architecture for social media summarisation', *Irish machine vision and image processing (IMVIP)*, eds S. Coleman, B. Gardiner and D. Kerr, University of Ulster, Magee, Derry, Irish Pattern Recognition and Classification Society (2014), 187-189 [Z. Zdziarski, J. Mitchell, P. Houdyer, D. Johnson, C. Bourges and R. Dahyot]
- Irish machine vision and image processing conference proceedings (IMVIP)*, eds Rozenn Dahyot, Gerard Lacey, Kenneth Dawson-Howe, François Pitié and David Moloney, Irish Pattern Recognition and Classification Society (2015), 1-139
- 'L2 registration for colour transfer', *23rd European signal processing conference (Eusipco)*, Nice, France (2015), 2366-2370 [M. Grogan, M. Prasad and R. Dahyot]
- Houlding, Brett*, 'Factors influencing when species are first named and estimating global species richness', *Global Ecology and Conservation*, 4 (2015), 243-254 [M.J. Costello, M. Lane, S. Wilson and B. Houlding]
- 'A conjugate class of utility functions for sequential decision problems', *Risk Analysis*, 35, 9 (2015), 1611-1622 [B. Houlding, F.P.A. Coolen and D. Bolger]
- Nipoti, Bernardo*, 'Bayesian inference with dependent normalized completely random measures', *Bernoulli*, 20, 3 (2014), 1260-1291 [A. Lijoi, B. Nipoti and I. Prünster]
- 'Dependent mixture models: clustering and borrowing information', *Computational Statistics and Data Analysis*, 71 (2014), 417-433 [A. Lijoi, B. Nipoti and I. Prünster]
- 'Discussion of "on simulation and properties of the stable law" by L. Devroye and L. James', *Statistical Methods and Applications*, 23, 3 (2014), 365-369 [S. Favaro and B. Nipoti]
- 'On the stick-breaking representation of σ -stable Poisson-Kingman models', *Electronic Journal of Statistics*, 8 (2014), 1065-1085 [S. Favaro, M. Lomeli, B. Nipoti and Y. Whye Teh]
- 'Posterior analysis of rare variants in Gibbs-type species sampling models', *Journal of Multivariate Analysis*, 131 (2014), 79-98 [O. Cesari, S. Favaro and B. Nipoti]
- 'Random variate generation for Laguerre-type exponentially tilted α -stable distributions', *Electronic Journal of Statistics*, 9 (2015), 1230-1242 [S. Favaro, B. Nipoti and Y. Teh]
- 'Full Bayesian inference with hazard mixture models', *Computational Statistics and Data Analysis*, 93 (2016), 359-372 [J. Arbel, A. Lijoi and B. Nipoti]
- Walsh, Cathal*, 'Temporal discrimination, a cervical dystonia endophenotype: penetrance and functional correlates', *Movement Disorders*, 29, 6 (2014), 804–811 [O. Kimmich, A. Molloy, R. Whelan *et al*]
- 'Direct and indirect economic consequences of multiple sclerosis in Ireland', *Applied Health Economics and Health Policy* (2014), <http://dx.doi.org/10.1007/s40258-014-0128-3> [E. Fogarty, C. Walsh, C. McGuigan, N. Tubridy and M. Barry]
- 'The impact of different equine influenza vaccine products and other factors on equine influenza antibody levels in Thoroughbred racehorses', *Equine Veterinary Journal* (2014), <http://dx.doi.org/10.1111/evj.12353> [M. Ryan, S. Gildea, C. Walsh and A. Cullinane]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Trends in socio-economic inequalities in mortality by sex in Ireland from the 1980s to the 2000s', *Irish Journal of Medical Science* (2014), <http://dx.doi.org/10.1007/s11845-014-1189-x> [R. Layte, J. Banks, C. Walsh and G. McKnight]
- 'An evaluation of the role of environmental factors in the disease penetrance of cervical dystonia', *Journal of Neurology, Neurosurgery and Psychiatry*, 86, 3 (2015), 331-335 [Molloy A, Kimmich O, Williams L *et al*]
- 'The cost of the inpatient management of febrile neutropenia in cancer patients - a micro-costing study in the Irish healthcare setting', *European Journal of Care Cancer*, 24, 1 (2015), 125-132 [C. O'Brien, E. Fogarty, C. Walsh, O. Dempsey, M. Barry, M.J. Kennedy and L. McCullagh]
- White, Arthur*, 'BayesLCA: an R package for Bayesian latent class analysis', *Journal of Statistical Software*, 61, 13 (2014), 1-28 [A. White and T.B. Murphy]
- 'Bayesian variable selection for latent class analysis using a collapsed Gibbs sampler', *Statistics and Computing*, 26 (2016), 511-527 [A. White, J. Wyse and T.B. Murphy]
- 'Mixed membership of experts stochastic blockmodel', *Network Science*, Volume 4, Issue 01 (2016), 48-80 [A. White and B. Murphy]
- Wilson, Simon*, 'A review of probabilistic methods of assessment of load effects in bridges', *Structural Safety*, 53 (2015), 44-56 [E.J. O'Brien, F. Schmidt, D. Hajjalzadeh, X. Zhou, B. Enright, C.C. Caprani, S. Wilson and E. Sheils]
- 'Factors influencing when species are first named and estimating global species richness', *Global Ecology and Conservation*, 4 (2015), 243-254 [M.J. Costello, M. Lane, S. Wilson and B. Houlding]
- Wyse, Jason*, 'Improving power posterior estimation of statistical evidence', *Statistics and Computing*, 24 (2014), 709-723 [N. Friel, M. Hurn and J. Wyse]
- 'Bayesian variable selection for latent class analysis using a collapsed Gibbs sampler', *Statistics and Computing*, 26 (2016), 511-527 [A. White, J. Wyse and T. B. Murphy]

School of Engineering

CIVIL, STRUCTURAL AND ENVIRONMENTAL ENGINEERING

- Broderick, Brian*, 'Real time air quality forecasting using integrated parametric and non-parametric regression techniques', *Atmospheric Environment*, 103 (2015), 53-65 [A. Donnelly, B.D.R Misstear and B. Broderick]
- Caulfield, Brian*, 'Investigating traffic light violations by cyclists in Dublin city centre', *Accident Analysis and Prevention*, 84 (2015), 65-73 [M. Richardson and B. Caulfield]
- 'A multidisciplinary approach for risk analysis of infrastructure networks in response to extreme weather', *6th European transport research conference (TRA)*, Warsaw, Poland (2016), <http://hdl.handle.net/2262/74844> [M. Nogal, A. O'Connor, B. Caulfield and W. Brazil]
- 'Seeing the invisible: provision of environmental information in transport', *95th Annual meeting of the transportation research board*, Washington D.C. (2016), <http://hdl.handle.net/2262/74845> [W. Brazil and B. Caulfield]
- 'A sensitivity analysis of a dynamic restricted equilibrium model to evaluate traffic network resilience', *95th Annual meeting of the transportation research board*, Washington D.C. (2016), 1-10 [B. Martinez-Pastor, M. Nogal, A. O'Connor and B. Caulfield]
- 'Evaluating the quality of inter-urban cycleways', *Case Studies on Transport Policy* 4, 2 (2016), 96-103 [O. McCarthy, B. Caulfield and G. Deenihan]
- 'Technology engagement and privacy: a cluster analysis of reported social network use among transport survey respondents', *Transportation Research Part C: Emerging Technologies*, 63 (2016), 195-206 [O.T. McCarthy, B. Caulfield and M. O'Mahony]

Recent publications – Faculty of Engineering, Mathematics and Science

'Customer perceptions of quality of service in public transport: evidence for bus transit in Scotland', *Case Studies on Transport Policy*, (2016), DOI:10.1016/j.cstp.2016.03.002 [C. Morton, B. Caulfield and J. Anable]

'Record linkage for road traffic injuries in Ireland using police hospital and injury claims data', *Journal of Safety Research*, 58 (2016), 1-10 [J. Short and B. Caulfield]

Gallagher, John, 'Energy recovery in the water industry using micro-hydropower: an opportunity to improve sustainability', *Water Policy*, 16 (2014), 168-183 [A. McNabola, P. Coughlan, L. Corcoran, C. Power, A.P. Williams. I. Harris, J. Gallagher and D. Styles]

'A strategic assessment of micro-hydropower in the UK and Irish water industry: identifying technical and economic constraints', *Renewable Energy*, 81 (2015), 808-815 [J. Gallagher, I.M. Harris, A.J. Packwood, A. McNabola, A.P. Williams]

'Life cycle environmental balance and greenhouse gas mitigation potential of micro-hydropower energy recovery in the water industry', *Journal of Cleaner Production*, 99 (2015), 152-159 [J. Gallagher, A. McNabola, D. Styles and A.P. Williams]

'Current and future environmental balance of small scale run-of-river hydropower', *Environmental Science and Technology*, 49, 10 (2015), 6344-6351 [J. Gallagher, D. Styles, A. McNabola, A.P. Williams]

'Passive methods for improving air quality in the built environment: a review of porous and solid barriers', *Atmospheric Environment*, 120 (2015), 61-70 [J. Gallagher, R. Baldauf, C. Fuller, P. Kumar, L.W. Gill and A. McNabola]

'Making green technology greener: achieving a balance between carbon and resource savings through ecodesign in hydropower systems', *Resources, Conservation and Recycling*, 105 (2015), 11-17 [J. Gallagher, D. Styles, A. McNabola and A.P. Williams]

'Inventory compilation for renewable energy systems: the pitfalls of materiality thresholds and priority impact categories using hydropower case studies', *International Journal of Life Cycle Assessment*, 20, 12 (2015), 1701-1707 [J. Gallagher, D. Styles, A. McNabola and A.P. Williams]

'A modelling exercise to examine variations of NO_x concentrations on adjacent footpaths in a street canyon: the importance of accounting for wind conditions and fleet composition', *Science of the Total Environment*, 550 (2016), 1065-1074 [J. Gallagher]

Gill, Laurence, 'Solar oxidation and removal of arsenic process - key parameters for continuous flow application', *Water Research*, 86 (2015), 46-57 [L.W. Gill and C. O'Farrell]

'Use of stable isotopes to characterise the hydrogeology of a lowland karst aquifer', *International conference on groundwater in karst*, Birmingham, UK (2015), 30 [L.W. Gill, T. McCormack and P.M. Johnston]

'Quantification of submarine/intertidal groundwater discharge from a lowland karst catchment', *International conference on groundwater in karst*, Birmingham, UK (2015), 50 [T. McCormack, L.W. Gill, O. Naughton and P.M. Johnston]

'Monitoring the potential impacts of domestic wastewater treatment systems on surface water quality in poorly permeable subsoils', *River basins*, Karlsruhe Institute of Technology, Germany (2015), 1 [L. Brophy, D. Dubber, C. Fennell, B.D.R. Misstear and L.W. Gill]

'Sustainability of hand-dug wells in Tanzania: results from a post-evaluation', *38th WEDC International Conference*, Loughborough University, UK (2015), 1-8 [L.W. Gill and F. Flachenberg]

'Passive methods for improving air quality in the built environment: a review of porous and solid barriers', *Atmospheric Environment*, 120 (2015), 61-70 [J. Gallagher, R. Baldauf, C. Fuller, P. Kumar, L.W. Gill and A. McNabola,]

'Predicted changes in lowland karst network groundwater flooding in response to climate change', *42nd International association of hydrogeologists congress*, Rome, Italy (2015), 1-2 [L.W. Gill, T. McCormack, P. Nolan, O. Naughton and P.M. Johnston]

Recent publications – Faculty of Engineering, Mathematics and Science

'The impact of domestic wastewater treatment system effluent on private water wells: an examination evaluation of contamination fingerprinting techniques', *42nd International association of hydrogeologists congress*, Rome, Italy (2015), 1-2 [C. Fennell, B. Misstear, K. Kilroy, V. O'Flaherty, D. Dubber and L.W. Gill]

'Upflow evapotranspiration system for the treatment of on-site wastewater effluent', *Water*, 7 (2015), 2037-2059 [S. Curneen and L.W. Gill]

'The impact of on-site wastewater from high density cluster developments on groundwater quality', *Journal of Contaminant Hydrology*, 182 (2015), 36-50 [P. Morrissey, P.M. Johnston, L.W. Gill]

'Prediction of indoor air exposure from outdoor air quality using an artificial neural network model for inner city commercial buildings', *International Journal of Environmental Research and Public Health*, 12 (2015), 15233-15253 [A. Challoner, F. Pilla and L.W. Gill]

'Evaluation of wastewater post-treatment options for reuse purposes in the agricultural sector under rural development conditions', *Journal of Water Process Engineering*, 9 (2016), 111-122 [S.S. Gharbia, A. Aish, T. Abushbak, G. Qishabi, I. Al-Shawa, A. Gharbia, N. Zelanokova, L.W. Gill and F. Pilla]

'Carbon and nitrogen dynamics and greenhouse gases emissions in constructed wetlands: a review', *Hydrology and Earth Systems Science*, 20 (2016), 109-123 [M.M.R. Jahangir, O. Fenton, L. Gill, C. Müller, P. Johnston and K.G. Richards]

'Development of a continuous flow reactor for the solar oxidation and removal of arsenic for sustainable rural water supply', *Journal of Environmental Chemical Engineering*, 4 (2016), 1181-1190 [C. O'Farrell, J. Mac Mahon and L.W. Gill]

'Evapotranspiration systems using willows for the treatment of on-site wastewater effluent in areas of low permeability subsoils', *Ecological Engineering*, 92 (2016), 199-209 [S. Curneen and L.W. Gill]

'Using GIS based algorithms for GCMs' performance evaluation', *IEEE, 18th Mediterranean electrical conference (Melecon)*, Limassol, Cyprus (2016), 1-6 [S.S. Gharbia, L.W. Gill, P.M. Johnston and F. Pilla]

McNabola, Aonghus, 'Estimation and back extrapolation of CO₂ emissions from the road transport sector: emissions in Ireland, 1990 to 2013', *Air Pollution XXIII*, Longhurst, eds Capilla, Brebbia and Barnes, Valencia, Spain, WIT Press (2015), 67-75 [S. Alam, P. Duffy, B. Hyde and A. McNabola]

'Exploring the modelling of spatio-temporal variations in ambient air pollution within the land use regression framework: estimation of PM10 concentrations on a daily basis', *Journal of the Air and Waste Management Association*, 65, 5 (2015), 628-640 [M.S. Alam and A. McNabola]

'Full-scale long-term assessment of the performance of an aspiration efficiency based air pollution control device for building HVAC systems', *Healthy buildings Europe*, Eindhoven (2015), 1-8 [A. McNabola and D. Morgan]

'Life cycle environmental balance and greenhouse gas mitigation potential of micro-hydropower energy recovery in the water industry', *Journal of Cleaner Production*, 99 (2015), 152-159 [J. Gallagher, A. McNabola, D. Styles and A.P. Williams]

'Current and future environmental balance of small scale run-of-river hydropower', *Environmental Science and Technology*, 49, 10 (2015), 6344-6351 [J. Gallagher, D. Styles, A. McNabola and A.P. Williams]

'Passive methods for improving air quality in the built environment: a review of porous and solid barriers', *Atmospheric Environment*, 120 (2015), 61-70 [J. Gallagher, R. Baldauf, C. Fuller, P. Kumar, L.W. Gill and A. McNabola]

'A parametric experimental investigation of the operating conditions of gravitational vortex hydropower', *Journal of Clean Energy Technologies*, 4, 2 (2016), 112-119 [C. Power, P. Coughlan and A. McNabola]

Recent publications – Faculty of Engineering, Mathematics and Science

'Making green technology greener: achieving a balance between carbon and resource savings through ecodesign in hydropower systems', *Resources, Conservation and Recycling*, 105 (2015), 11-17 [J. Gallagher, D. Styles, A. McNabola and A.P. Williams.]

'The optimization of water distribution networks for combined hydropower energy recovery and leakage reduction', *Journal of Water Resource Planning and Management* (2015), 1-8 [L. Corcoran, A. McNabola and P. Coughlan]

'Inventory compilation for renewable energy systems: the pitfalls of materiality thresholds and priority impact categories using hydropower case studies', *International Journal of Life Cycle Assessment*, 20, 12 (2015), 1701-1707 [J. Gallagher, D. Styles, A. McNabola and A.P. Williams]

'Development of a high resolution wave climate modelling methodology for offshore, nearshore and onshore locations of interest', *International Journal of Marine Energy*, 16 (2016), 30-40 [D. Carr, L.W. Gill and A. McNabola]

Missteart, Bruce, 'Real time air quality forecasting using integrated parametric and non-parametric regression techniques', *Atmospheric Environment*, 103 (2015), 53–65 [A. Donnelly, B.D.R Missteart and B. Broderick]

'Using microbiological tracers to assess the impact of winter land use restrictions on the quality of stream headwaters in a small catchment', *Science of the Total Environment*, 541 (2015), 949-956 [R. Flynn, J. Deakin, M. Archbold, H. Cushnan, B.D.R. Missteart, K. Kilroy and V. O'Flaherty]

'Water resources in Uganda', *Water is life: progress to secure safe water provision in rural Uganda*, eds G.H. Fagan, S. Linnane, K.G. McGuigan and A. Rugumayo, Rugby, UK, Practical Action Publishing (2015), 73-96 [A. Rugumayo, E. Jennings, S. Linnane and B.D.R. Missteart]

'The effect of long range air mass transport pathways on PM10 and NO₂ concentrations at urban and rural background sites in Ireland: quantification using clustering techniques', *The Journal of Environmental Science and Health, Part A*, 50, 7 (2015), DOI 10.1080/10934529.20 [A. Donnelly, B. Broderick and B.D.R Missteart]

'Looking to the future: opportunities and challenges in hydrogeology education and training', *36th annual groundwater seminar on 'sustaining Ireland's water future: the role of groundwater'*, Tullamore (2016), 11-11-18 [B.D.R. Missteart]

O'Kelly, Brendan, 'Briefing: Atterberg limits and peat', *Proceedings of the Institution of Civil Engineers, environmental geotechnics*, 4 (2017), 5 [B.C. O'Kelly]

'Chapter 11: case studies of vacuum consolidation ground improvement in peat deposits', *Ground improvement case histories: embankments with special reference to consolidation and other physical methods*, eds Indraratna B., Chu J. and Rujikiatkamjorn C., Kidlington, Oxford, Butterworth-Heinemann (Elsevier) (2015), 315-345 [B.C. O'Kelly]

'Phyllite clay-cement composites having improved engineering properties and material applications', *Applied Clay Sciences*, 114 (2015), 229-233 [E. Garzón, M. Cano, B.C. O'Kelly and P.J. Sánchez-Soto]

'Analysis and design of monopile foundations for offshore wind-turbine structures', *Marine Georesources and Geotechnology*, 34 (2016), <http://dx.doi.org/10.1080/1064119X.2015.1033070> [M. Arshad and B.C. O'Kelly]

'Experimental observations of settlement of footings supported on soft clay reinforced with granular columns: laboratory model study', *Geotechnical and Geoenvironmental Engineering*, 142 (2016), 15 [P.G. Noor Muneerah D.K. Haji Jeludin, V. Sivakumar, B.C. O'Kelly and P.A. Mackinnon]

'Discussion: measuring the plastic limit of soils: an experimental study', *Proceedings of the Institution of Civil Engineers, geotechnical engineering*, 169 (2016), 3 [V. Sivakumar, B.C. O'Kelly, L. Henderson, C. Moorhead, S.H. Chow and G.E. Barnes]

'Discussion: measuring the plastic limit of fine soils: an experimental study', *Proceedings of the Institution of Civil Engineers, geotechnical engineering*, 169 (2016), 4 [V. Sivakumar, B.C. O'Kelly, L. Henderson, C. Moorhead, S.H. Chow, S.K. Haigh and P.J. Vardanega]

Recent publications – Faculty of Engineering, Mathematics and Science

'Undrained triaxial relaxation tests on a fibrous peat' *International conference on creep and deformation characteristics in geomaterials*, eds Dijkstra J., Karstunen M., Gras J.P. and Karlsson M., Gothenburg, Sweden, Gothenburg, Sweden (2015), 89-93 [L. Zhang, B.C. O'Kelly and T. Nagel]

O'Mahony, Margaret, 'Monitoring the static vehicle load on a heavy goods vehicle', *IEEE 18th International conference on intelligent transportation systems*, Gran Canaria, Spain (2015), 1424-1429 [I. Humphreys, P. McDonald, M. O'Mahony and D. Geraghty]

'Informing the strategic rollout of fast electric vehicle charging networks with user charging behaviour data analysis', *95th Annual meeting of the transportation research board*, Washington D.C. (2016), <http://hdl.handle.net/2262/74973> [P. Morrissey, P. Weldon and M. O'Mahony]

'End user response to an event detection and route reconstruction security system prototype for use in airports and public transport hubs', *Annual meeting of the transportation research board*, Washington D.C. (2016), <http://hdl.handle.net/2262/74974> [O.T. McCarthy and M. O'Mahony]

'Future standard and fast charging infrastructure planning: an analysis of electric vehicle charging behaviour', *Energy Policy*, 89 (2016), 257-270 [P. Morrissey, P. Weldon and M. O'Mahony]

'Technology engagement and privacy: a cluster analysis of reported social network use among transport survey respondents', *Transportation Research Part C: Emerging Technologies*, 63 (2016), 195-206 [O.T. McCarthy, B. Caulfield and M. O'Mahony]

'An investigation into usage patterns of electric vehicles in Ireland', *Transportation Research Part D: Transport and the Environment*, 43 (2016), 207-225 [P. Weldon, P. Morrissey, J. Brady and M. O'Mahony]

'Long-term cost of ownership comparative analysis between electric vehicles and internal combustion engine vehicles', *Journal of Power Sources*, 319 (2016), 27-38 [P. Weldon, P. Morrissey and M. O'Mahony]

'Investigating the temporal variability of noise in an urban environment', *International Journal of Sustainable Built Environment*, 5, 1 (2016), 34-45 [D. Geraghty and M. O'Mahony]

Orr, Trevor, 'Recommended changes to Eurocode 7', *16th European conference on soil mechanics and geotechnical engineering (ECSMGE)*, eds Winter M.G., Smith D.M., Eldred P.J.L. and Toll D.G., Edinburgh, ICE Publishing (2015), 4301-4306 [T.L.L. Orr, B. Klosinski and A. Lees]

Pavia, Sara, 'Characterisation of Irish sandstones used for building', *Civil Engineering Research in Ireland (CERA)*, Belfast (2014), <http://hdl.handle.net/2262/75845> [P. Kissane, S.Pavia and O. Kinnane]

'An assessment of some properties of Roman cement', *Civil engineering research in Ireland (CERA)*, Belfast (2014), <http://hdl.handle.net/2262/75846> [S. Pavia and M. Durcan]

'Effect of mortar water content in the properties of masonry', *9th International masonry conference*, eds Lourenço, Haseltine and Vasconcelos, Guimarães, Portugal (2014), <http://hdl.handle.net/2262/75847> [A. Costigan and S. Pavia]

'RRT3: statistical analysis of hemp concrete mechanical properties variability', *First international conference on bio-based building materials*, Clermont-Ferrand, France (2015), <http://hdl.handle.net/2262/75854> [C. Niyigena, S. Amziane, A. Chateaufneuf et al]

'Effect of testing variables on the compressive strength of lime hemp concrete', *First international conference on bio-based building materials*, Clermont-Ferrand, France (2015), <http://hdl.handle.net/2262/75852> [S. Pavia, R. Walker and J. McGinn]

'Mechanical and hygric properties of natural hydraulic lime (NHL) mortars with additives', *Third conference on smart monitoring, assessment and rehabilitation of civil structures (SMAR)*, eds Alper Ilki, Masoud Motavalli, Pinar Inci and Michele Köhli, Antalya (2015), 101- [M. Aly and S. Pavia]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'An experimental evaluation of prediction models for the mechanical behaviour of unreinforced, lime-mortar masonry under compression', *Journal of Building Engineering*, 4 (2015), 283-294 [A. Costigan, S. Pavia and O. Kinnane]
- 'Properties of hydrated lime mortars with pozzolans', *3rd International congress on construction and building research*, eds Escuela Técnica Superior de Edificación, Universidad Politécnica de Madrid (2015), <http://hdl.handle.net/2262/75853> [M. Aly and S. Pavia]
- 'Thermal and hygric properties of insulation materials suitable for historic fabrics', *3rd International congress on construction and building research*, eds Escuela Técnica Superior de Edificación, Universidad Politécnica de Madrid (2015), <http://hdl.handle.net/2262/75851> [R. Walker and S. Pavia]
- 'Effect of limestone aggregate on the properties of natural hydraulic lime mortar (NHL 5)', *Congreso Euro - Americano rehabend*, Burgos, Spain (2016), <http://hdl.handle.net/2262/75850> [M. Aly and S Pavia]
- 'An assessment of raw materials for earth construction in Co. Offaly, Ireland', *Congreso Euro - Americano rehabend*, Burgos, Spain (2016), <http://hdl.handle.net/2262/75849> [J. McPadden and S. Pavia]
- 'Thermal performance of a selection of insulation materials suitable for historic buildings', *Building and Environment*, 94 (2015), 155-165 [R. Walker and S. Pavia]
- 'Measuring the design of empathetic buildings: a review of universal design evaluation methods', *Disability and Rehabilitation Assist Technology* (2014), 1-9 [E.C. O'Shea, S. Pavia, M. Dyer, G. Craddock and N. Murphy]
- Pilla, Francesco, 'Projection of future climate by multi-model median approach under GIS environment along the Gaza Strip, Palestine', *Journal of Environment and Earth Science*, 5, 3 (2015), <http://hdl.handle.net/2262/75014> [S.S. Gharbia, A. Aish, F. Pilla and A.S. Gharbia]
- 'Modelling potential impacts of climate change on groundwater of the Gaza Coastal Aquifer from ensemble of global climate model projections', *Civil and Environmental Research*, 7, 2 (2015), <http://hdl.handle.net/2262/75015> [S.S. Gharbia, A. Aish and F. Pilla]
- 'Impacts of climate change on a spatially distributed water balance in the Gaza Strip, Palestine', *Journal of Environment and Earth Science*, 5, 4 (2015), <http://hdl.handle.net/2262/75016> [S.S. Gharbia, A. Aish and F. Pilla]
- 'A combined assessment of air and noise pollution on the high line, New York City', *Transportation Research Part D: Transport and Environment* (2015), <http://hdl.handle.net/2262/74975> [E.A. King, E.P. Bourdeau, X.Y.K. Zheng and F. Pilla]
- 'Prediction of indoor air exposure from outdoor air quality using an artificial neural network model for inner city commercial buildings', *International Journal of Environmental Research and Public Health*, 12 (2015), 15233-15253 [A. Challoner, F. Pilla and L.W. Gill]
- 'Evaluation of wastewater post-treatment options for reuse purposes in the agricultural sector under rural development conditions', *Journal of Water Process Engineering* (2016), <http://hdl.handle.net/2262/75404> [S.S. Gharbia, A. Aish, T. Abushbak, G. Qishawi, I. Al-Shawa, A. Gharbia, M. Zelenakova, L. Gill and F. Pilla]
- 'A re-examination of the life and work of A.F.G. Kerr and of his colleagues and friends', *Thai Forest Bulletin*, 43 (2015), 111-131 [J.A.N. Parnell, F. Pilla and the Thai biogeography group]
- 'Groundwater quality evaluation using GIS based geostatistical algorithms', *Journal of Geoscience and Environment Protection*, 4, 2 (2016), 89-103 [A.S. Gharbia, S.S. Gharbia, T. Abushbak, H. Wafi, A. Aish, M. Zelenakova and F. Pilla]
- 'Computer-aided risk assessment at urban scale. Model definition and validation on a case study', *European congress on computational methods in applied sciences and engineering (ECCOMAS)*, Crete, Greece (2016), <http://hdl.handle.net/2262/76003> [A. Basaglia, A. Aprile, F. Pilla and E. Spacone]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Using GIS based algorithms for GCMs' performance evaluation', *IEEE 18th Mediterranean electrochemical conference (Melecon)*, Limassol, Cyprus (2016), 1-6 [S.S. Gharbia, L.W. Gill, P.M. Johnston and F. Pilla]
- West, Roger*, 'Sewage sludge ash characteristics and potential for use in concrete', *Construction and Building Materials*, 98 (2015), 767-779 [C.J. Lynn, R.K. Dhir, G.S. Ghataora and R.P. West]
- 'Laterally restrained bamboo concrete composite arch under uniformly distributed loading', *Journal of Structural Engineering*, 141, 3 (2015), [http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0000945](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0000945) [C. Korde, R. West, A. Gupta and S. Puttagunta]
- 'Concrete - making an impact', *Proc. civil engineering research in Ireland*, Queen's University Belfast (2015), 303-310 [R.P. West]
- 'Ultimate structural capacity of very high dosage steel fibre concrete beams and slabs', *Proc. civil engineering research in Ireland*, Queen's University Belfast (2014), 311-316 [A. Donnelly, R.P. West, A.K. Mohammed and M. Grimes]
- 'Impact resistance of high-dosage steel fibre reinforced concrete slabs', *Proc. Civil Engineering Research in Ireland*, Queen's University Belfast (2014), 327-332 [R.P. West and M. Dousti]
- 'Performance of vinyl on concrete floors subject to pull off testing', *Proc. Civil Engineering Research in Ireland*, Queen's University Belfast (2014), 451-456 [N. Holmes and R.P. West]
- 'The development of key performance indicators to monitor early facilities management performance through the use of BIM technologies in public sector projects', *2nd International conference on civil and building engineering informatics*, Tokyo (2014), 8 [B. McAuley, A.V. Hore and R. West]
- 'Concrete research on the island of Ireland 2004-2015 - an overview', *Concrete practice in Ireland*, eds M. Richardson, Dublin (2015), 124-157 [R.P. West]
- 'Formwork buildability: bridging the designer-constructor divide', *UKIERI concrete congress - concrete research driving profit and sustainability*, Jalandhar (2015), 1887-1897 [R.P. West and K. McConnell]
- 'The rheological characteristics of steel fibre reinforced self compacting concrete with PFA and GGBS', *UKIERI concrete congress - concrete research driving profit and sustainability*, Jalandhar (2015), 2479-2495 [R. Belton, S. Goyal, M. Kumar and R.P. West]
- 'Flexural and shear performance of high dosage steel fibre reinforced concrete in suspended slabs', *UKIERI concrete congress - concrete research driving profit and sustainability*, Jalandhar (2015), 2405-2417 [R.P. West, A.K. Mohammed and D. Bhunia]
- 'Developing key performance indicators to measure effectiveness of early facilities management performance on BIM governed public sector projects', *CITA BIM Gathering*, Dublin (2015), 198-206 [B. McAuley, A. Hore and R.P. West]
- 'Ensuring that the facilities management needs of the end user are effectively communicated through BIM during the design stage', *CITA BIM Gathering*, Dublin (2015), 207-216 [B. McAuley, L. Gunnigan, A. Hore and R.P. West]
- 'The adoption of building information modelling (BIM) to improve existing teaching methods and support services within higher education institutions in Ireland', *CITA BIM gathering*, Dublin (2015), 271-278 [P. Mc Donnell and R.P. West]
- 'Re-examining of external temperature as a predictor of energy use', *J. Building Engineering*, 3 (2015), 184-194 [P. Shiel and R.P. West]
- Xiao, Liwen*, 'Export of phosphorus and nitrogen from lodgepole pine (*Pinus contorta*) brush windrows on harvested blanket peat forests', *Ecological Engineering*, 64 (2014), 161-170 [Z. Asama, M. Nieminen, C. O'Driscoll, M. O'Connor, S. Sarkkola, A. Kaila, A. Sana, M. Rodgers, X. Zhan and L. Xiao]

Recent publications – Faculty of Engineering, Mathematics and Science

'Whole-tree harvesting and grass seeding as potential mitigation methods for phosphorus export control in forest harvested peatland catchments', *Forest Ecology and Management*, 319 (2014), 176-185 [C. O'Driscoll, M. O'Connor, Z. Asam, E. de Eyto, R. Poole, M. Rodgers, X. Zhan and L. Xiao]

'Nutrient and heavy metal dynamics in decaying harvest residue needles on drained blanket peat forests', *European Journal of Forest Research*, 133 (2014), 969-982 [Z. Asam, M. Nieminen, A. Kaila, R. Laiho, S. Sarkkola, M. O'Connor, A. Sana, C. O'Driscoll, M. Rodgers, X. Zhan and L.W. Xiao]

'Phosphorus export from drained Scots pine mires after clear-felling and bioenergy harvesting', *Forest Ecology and Management*, 325 (2014), 99-107 [A. Kaila, S. Sarkkola, A. Laurén, L. Ukonmaanaho, H. Koivusalo, L. Xiao, C. O'Driscoll, Z. Asam, A. Tervahauta and M. Nieminen]

'Effect of clear-felling and harvest residue removal on nitrogen and phosphorus export from drained norway spruce mires in southern finland', *Boreal Environment Research*, 20, 6 (2015), 693-706 [A. Kaila, A. Laurén, S. Sarkkola, H. Koivusalo, L. Ukonmaanaho, C. O'Driscoll, L. Xiao, Z. Asam and M. Nieminen]

'Utilisation of potato processing wastewater for microbial lipids and γ -linolenic acid production by oleaginous fungi', *Journal of the Science of Food and Agriculture*, 95, 15 (2015), 3084-3090 [I. Muniraj, L. Xiao, H. Liu and X. Zhan]

'Forest clearfelling effects on dissolved oxygen and metabolism in peatland streams', *Journal of Environmental Management*, 166 (2016), 250-259 [C. O'Driscoll, M. O'Connor, Z. Asam, E. de Eyto, L. Brown and L. Xiao]

'Microbial lipid production from renewable and waste materials for second-generation biodiesel feedstock', *Environmental Technology Reviews*, 4, 1 (2015), 1-16 [M.I. Kumar, U.S. Kumar, Hu Zhenhu, X. Liwen and Z. Xinmin]

ELECTRONIC AND ELECTRICAL ENGINEERING

Burke, Martin, 'High-impedance electrode contact monitoring', *19th Int. conf. circuits*, Zakynthos, Greece (2015), r-02 [M. J. Burke, C. Molloy and H. Fossan]

'High-impedance electrode contact monitoring', *Recent advances in circuits*, ed. Mladenov V., Athens, WSEAS (2015), 31-36 [M. J. Burke, C. Molloy and H. Fossan]

'Measuring tissue compression: a circuit for sensing and signal conditioning', *Int. conf. appl. electron. pervading ind., environ. and soc.*, Rome (2015), r-17 [S. Hermann, P. Thomas, R.B. Reilly, and M. Burke]

'Contact monitoring of un-gelled stainless-steel', *International Journal of Biology and Biomedical Engineering*, 10 (2016), 30-39 [M. J. Burke, C. Molloy and H. Fossan]

DaSilva, Luiz, 'Fungible orthogonal channel sets for multi-user exploitation of spectrum', *IEEE Transactions on Wireless Communications*, 14, 4 (2015), 2281-2293 [I. Macaluso, H. Ahmadi, L.A. DaSilva]

'Power control and soft topology adaptations in multihop cellular networks with multi-point connectivity', *IEEE Transactions on Communications*, 63, 3 (2015), 683-694 [S.A. Ahmad and L.A. DaSilva]

'A split MAC approach for SDR platforms', *IEEE Transactions on Computers*, 64, 4 (2015), 912-924 [P. Di Francesco, S. McGettrick, U.K. Anyanwu, J.C. O'Sullivan, A.B. MacKenzie and L.A. DaSilva]

'A Bayesian overlapping coalition formation game for device-to-device spectrum sharing in cellular networks', *IEEE Transactions on Wireless Communications*, 14, 7 (2015), 4034-4051 [Y. Xiao, K. Chen, C. Yuen, Z. Han and L.A. DaSilva]

'Carrier aggregation/channel bonding in next generation cellular networks: methods and challenges', *IEEE Network*, 28, 6 (2014), 34-40 [Z. Khan, H. Ahmadi, E. Hossain, M. Coupechoux, L. DaSilva and J. Lehtomäki]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'The FINS framework: an open source userspace networking subsystem for linux', *IEEE Network*, 28, 5 (2014), 32-37 [M. Thompson, A. Abdallah, J. Reed, A. MacKenzie and L. DaSilva]
- 'Bayesian hierarchical mechanism design for cognitive radio networks', *IEEE Journal on Selected Areas in Communications*, 33, 5 (2015), 986-1001 [Y. Xiao, Z. Han, K. Chen and L.A. DaSilva]
- 'Resource sharing in heterogeneous cloud radio access networks', *IEEE Wireless Communications*, 22, 3 (2015), 74-82 [M.A. Marotta, N. Kaminski, I. Gomez-Miguelez, L.Z. Granville, J. Rochol, L. DaSilva and C.B. Both]
- 'Multi-leader multi-follower stackelberg game among wi-fi, small cell and macrocell networks', *IEEE global communications conference (GLOBECOM)*, Austin, TX (2014), 4520-4524 [H. Zhang, M. Bennis, L.A. DaSilva and Z. Han]
- 'An economic model of subscriber offloading between mobile network operators and WLAN operators', *12th International symposium on modeling and optimization in mobile, ad hoc, and wireless networks (WiOpt)*, (2014), 444-451 [C.W. Patterson, A.B. MacKenzie, S. Glisic, (...), J. Roning and L.A. DaSilva]
- 'Experimental assessment of eigenvalue-based detection for cognitive radio', *IEEE sensor array and multichannel signal processing workshop*, A Coruña (2014), 157-160 [J.P. Miranda, B. Galkin, G. Abreu and L. DaSilva]
- 'Mobile network sharing between operators: a demand trace-driven study', *ACM SIGCOMM workshop on capacity sharing workshop (CSWS)*, New York, (2014), 39-44 [P. Di Francesco, F. Malandrino and L.A. DaSilva]
- 'A cooperative approach for dynamic spectrum access in radar bands', *International telecommunications symposium (ITS)*, Sao Paulo (2014), 1-5 [C. de Souza Lima, F. Paisana, J.F. de Rezende and L.A. DaSilva]
- 'Virtualizing testbed resources to enable remote experimentation in online telecommunications education', *IEEE global engineering education conference*, Tallin, Estonia (2015), 836-843 [J. M. Marquez-Barja, N. Kaminski, F. Paisana, C. Tranoris and L.A. DaSilva]
- 'Optimization of demand hotspot capacities using switched multi-element antenna equipped small cells', *IEEE 82nd vehicular technology conference (VTC-Fall)*, Boston, MA (2015), 1-5 [H. Ahmadi, D. Finn, R. Razavi, H. Claussen and L.A. DaSilva]
- 'Stochastic modelling of downlink transmit power in wireless cellular networks', *20th IEEE international workshop on computer aided modelling and design of communication links and networks (CAMAD)*, Guildford, UK (2015), 1-5 [B. Galkin, J. Kibilda and L.A. DaSilva]
- 'Context-aware radar modeling framework', *IEEE dynamic spectrum access networks (DySPAN)*, Stockholm, Sweden (2015), 1-10 [J.F. Santos, F. Paisana, N.J. Kaminski, J.M. Marquez-Barja and L.A. DaSilva]
- 'Reduction of radar band exclusion zones through database-aided beamforming', *IEEE dynamic spectrum access networks (DySPAN)*, Stockholm, Sweden (2015), 1-10 [F. Paisana, D. Finn, N. Marchetti and L.A. DaSilva]
- 'Infrastructure and spectrum sharing trade-offs in mobile networks', *IEEE dynamic spectrum access networks (DySPAN)*, Stockholm, Sweden (2015), 1-10 [J. Kibilda, P. Di Francesco, F. Malandrino and L.A. DaSilva]
- Doyle, Linda*, 'Low complexity CFO compensation in uplink OFDMA systems with receiver windowing', *IEEE transactions on signal processing*, 63, 10 (2015), 2546-2558 [A. Farhang, N. Marchetti, L.E. Doyle and B. Farhang-Boroujeny]
- Fannin, Paul*, 'Time solved susceptibility spectra of magnetic fluids', *Journal of Magnetism and Magnetic Materials*, 388 (2015), 45-48 [C.N. Marin, P.C. Fannin and I. Malaescu]
- 'Stable colloidal suspension of magnetic nanoparticles for applications in life sciences', *Materials Today: Proceedings*, 2, 6 (2015), 3813-3818 [E. Puscasu, C. Nadejde, D. Creanga, P. Fannin and C. Pirghie]

Recent publications – Faculty of Engineering, Mathematics and Science

- Materials Today: Proceedings*, eds Emil Puscasua, Claudia Nadejdea, Dorina Creang, Paul Fannin, Cristian Pirghie, 2, 6 (2015), 3813-3818
- 'The effect of particle concentration on the heating rate of ferrofluids for magnetic hyperthermia', *Annals of West University of Timisoara - Physics*, 58, 1 (2015), 81-88 [I. Malaescu, C. N. Marin, M. Bunoiu, P. C. Fannin, N. Stef and L. Iordaconiu]
- 'On the utility of low frequency, polarised, complex susceptibility measurements in the investigation of the dynamic properties of magnetic fluids', *Journal of Molecular Liquids*, 219 (2016), 773-779 [L. Qiang, P.C. Fannin, C.N. Marin, I. Malaescu and K. Raj]
- Furlong, Dermot**, 'Sonification listening: an empirical embodied approach', *21st International conference on auditory display (ICAD)*, ed. David Worrall, Graz, Austria (2015), 181-187 [S. Roddy and D. Furlong]
- 'Embodied auditory display affordances', *12th Sound and music computing conference*, ed. Joseph Timoney, NUI Maynooth (2015), 477-484 [S. Roddy and D. Furlong]
- Harte, Naomi**, 'ViSQOL: an objective speech quality model', *Eurasip Journal on Audio, Speech, and Music Processing*, 1 (2015), 13 [A. Hines, J. Skoglund, A.C. Kokaram and N. Harte]
- 'ViSQOLAudio: an objective audio quality metric for low bitrate codecs', *Journal of the Acoustical Society of America*, 137, 6 (2015), EL449-EL455 [A. Hines, E. Gillen, D. Kelly, J. Skoglund, A. Kokaram and N. Harte]
- 'TCD-TIMIT: an audio-visual corpus of continuous speech', *IEEE Transactions on Multimedia*, 17, 5 (2015), 603-615 [N. Harte and E. Gillen]
- 'TCD-VoIP, a research database of degraded speech for assessing quality in VoIP applications', *IEEE 7th international workshop on quality of multimedia experience (QoMEX)*, (2015), 7148100- [N. Harte, E. Gillen and A. Hines]
- Hess-Wijaya, Andrea**, 'Data-driven human mobility modeling: a survey and engineering guidance for mobile networking', *ACM Computing Surveys (CSUR)*, 48, 3 (2015), 38:1-38:39 [A. Hess, K.A. Hummel, W.N. Gansterer and G. Haring]
- Hines, Andrew**, 'ViSQOL: an objective speech quality model', *Eurasip Journal on Audio, Speech, and Music Processing*, 1 (2015), 13 [A. Hines, J. Skoglund, A.C. Kokaram and N. Harte]
- 'TCD-VoIP, a research database of degraded speech for assessing quality in VoIP applications', *IEEE 7th international workshop on quality of multimedia experience (QoMEX)*, (2015), 7148100 [N. Harte, E. Gillen and A. Hines]
- John, Matthias**, 'A dual band LTE PIFA antenna for M2M applications', *Microwave and Optical Technology Letters*, 57, 7 (2015), 1655-1658 [A. Loutridis, M. John and M. J. Ammann]
- 'Ultra-wideband antennas', *Handbook of Antenna Technologies*, ed Z.N. Chen, Singapore, Springer International Publishing (2015), http://dx.doi.org/10.1007/978-981-4560-75-7_59-1 [M. J. Ammann, M. John and G. Ruvio]
- Kokaram, Anil**, 'ViSQOL: an objective speech quality model', *Eurasip Journal on Audio, Speech, and Music Processing*, 1 (2015), 13 [A. Hines, J. Skoglund, A.C. Kokaram and N. Harte]
- Lalor, Edmund**, 'Towards a gaze-independent hybrid-BCI based on SSVEPs, alpha-band modulations and the P300', *IEEE engineering in medicine and biology society annual conference*, (2014), 1322-5 [G.M. Loughnane, E. Meade, R.B. Reilly and Lalor E.C.]
- 'Decoding of attentional selection in a cocktail party environment from single-trial EEG is robust to task', *IEEE engineering in medicine and biology society annual conference*, (2014), 1318-21 [T. Luteslager, J.A. O'Sullivan, R.B. Reilly and E.C. Lalor]
- 'Impaired auditory selective attention ameliorated by cognitive training with graded exposure to noise in patients with traumatic brain injury', *Neuropsychologia*, 75 (2015), 74-87 [N.M. Dundon, S.P. Dockree, V. Buckley, N. Merriman, M. Carton, S. Clarke, R.A. Roche, E.C. Lalor, I.H. Robertson and P.M. Dockree]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Low-frequency cortical entrainment to speech reflects phoneme-level processing', *Current Biology*, 25, 19 (2015), 2457-65 [G.M. Di Liberto, J.A. O'Sullivan and E.C. Lalor]
- 'Congruent visual speech enhances cortical entrainment to continuous auditory speech in noise-free conditions', *The Journal of Neuroscience*, 35, 42 (2015), 14195-204 [M.J. Crosse, J.S. Butler and E.C. Lalor]
- 'Functional connectivity changes in resting-state EEG as potential biomarker for amyotrophic lateral sclerosis', *PLOS ONE*, 10, 6 (2015), e0128682 [P.M. Iyer, C. Egan, M. Pinto-Grau, T. Burke, M. Elamin, B. Nasseroleslami, N. Pender, E.C. Lalor and O. Hardiman]
- 'Evidence for neural computations of temporal coherence in an auditory scene and their enhancement during active listening', *The Journal of Neuroscience*, 35, 18 (2015), 7256-63 [J.A. O'Sullivan, S.A. Shamma and E.C. Lalor]
- 'The cortical representation of the speech envelope is earlier for audiovisual speech than audio speech', *Journal of Neurophysiology*, 111, 7 (2014), 1400-8 [M.J. Crosse and E.C. Lalor]
- Macaluso, Irene**, 'Fungible orthogonal channel sets for multi-user exploitation of spectrum', *IEEE Transactions on Wireless Communications*, 14, 4 (2015), 2281-2293 [I. Macaluso, H. Ahmadi and L.A. DaSilva]
- Marchetti, Nicola**, 'Low complexity CFO compensation in uplink OFDMA systems with receiver windowing', *IEEE Transactions on Signal Processing*, 63, 10 (2015), 2546-2558 [A. Farhang, N. Marchetti, L.E. Doyle and B. Farhang-Boroujeny]
- 'Reduction of radar band exclusion zones through database-aided beamforming', *IEEE dynamic spectrum access networks (DySPAN)*, Stockholm, Sweden (2015), 1-10 [F. Paisana, D. Finn, N. Marchetti and L.A. DaSilva]
- 'Towards the 5th generation of wireless communication systems', *ZTE Communications*, 13, 1 (2015), 11-19 [N. Marchetti]
- 'On massive MIMO and its applications to machine type communications and FBMC-based networks', *EAI Endorsed Transactions on Ubiquitous Environments*, 2, 5 (2015), <http://eudl.eu/doi/10.4108/ue.2.5.e3> [J.P. Miranda, A. Farhang, N. Marchetti, F. De Figueiredo, F. Cardoso and F. Figueiredo]
- 'A game theoretical approach for pilot contamination avoidance in massive MIMO', *IEEE Wireless Communications Letters* (2015), <http://dx.doi.org/10.1109/LWC.2015.2487261> [H. Ahmadi, A. Farhang, N. Marchetti and A. MacKenzie]
- 'Low complexity modem design for GFDM', *IEEE Transactions on Signal Processing*, 64, 6 (2015), 1507-1518 [A. Farhang, N. Marchetti and L. Doyle]
- 'Low complexity GFDM receiver design: a new approach', *IEEE international conference on communications (ICC)* (2015), <http://dx.doi.org/10.1109/ICC.2015.7249078> [A. Farhang, N. Marchetti and L. Doyle]
- 'A stochastic geometry framework for LOS/NLOS propagation in dense small cell networks', *IEEE international conference on communications (ICC)* (2015), <http://dx.doi.org/10.1109/ICC.2015.7248759> [C. Galiotto, N. Pratas, N. Marchetti and L. Doyle]
- 'Frequency spreading equalization in multicarrier massive MIMO', *IEEE international conference on communications (ICC)* (2015), <http://dx.doi.org/10.1109/ICCW.2015.7247356> [A. Aminjavaheri, A. Farhang, N. Marchetti, L. Doyle and B. Farhang-Boroujeny]
- 'Dynamic LSA for 5G networks - the ADEL perspective', *European conference on networks and communications (EuCNC)* (2015), <http://dx.doi.org/10.1109/EuCNC.2015.7194066> [A. Morgado, A. Gomes *et al*]
- 'Implementation of temporal spectrum sharing for radar bands', *IEEE international symposium on dynamic spectrum access networks (DySPAN)* (2015), <http://dx.doi.org/10.1109/DySPAN.2015.7343913> [F. Paisana, J. Santos, N. Kaminski, J. Marquez-Barja, N. Marchetti and L. DaSilva]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Accuracy vs. complexity trade-off in simulations of future wireless networks', *IEEE international symposium on personal, indoor and mobile radio communications (PIMRC)* (2015), <http://dx.doi.org/10.1109/PIMRC.2015.7343570> [C. Galiotto, H. Crowley, N. Marchetti and L. Doyle]
- 'Evaluating dynamic bandwidth allocation of virtualised passive optical networks over mobile traffic traces', *IEEE/OSA Journal of Optical Communications and Networking*, 8, 3 (2016), 129-136 [P. Alvarez, N. Marchetti and M. Ruffini]
- 'A complex systems science perspective on cognitive networks', *Systems Science and Complexity* (2016), <http://dx.doi.org/10.1007/s11424-016-4122-8> [I. Macaluso, C. Galiotto, N. Marchetti and L. Doyle]
- Panarin, Yuri**, 'Dielectric study of liquid crystals with large electroclinic effect', *Molecular Crystals and Liquid Crystals*, 610, 1 (2015), 193-200 [O.E. Panarina, Y.P. Panarin and J.K. Vij]
- Perova, Tatiana**, 'Polarized Raman spectroscopy and chemometric analysis of micro-crystalline silicon for solar cells', *International conference on smart material research (ICSMR)*, Istanbul, Turkey, EDP Sciences (2015), 01011-p-1-01011-p-4 [D. Adley, T.S. Perova, E. Monaghan and A.R. Ellingboe]
- 'Influence of dipole-dipole interactions on absorption spectra of granular films and colloidal solutions of gold and silver nanoparticles', *Journal of Optical Technology*, 82, 4 (2015), 3-13 [I.I. Shaganov and T.S. Perova]
- 'Optical spectra of composite one-dimensional photonic crystals with extended stop bands based on a Si-Air structure', *IEEE Journal of Lightwave Technology*, 33, 17 (2015), 3577-3583 [V.A. Tolmachev, Y.A. Zharova, T.S. Perova, V.A. Melnikov and S.A. Dyakov]
- Pitie, Francois**, *Irish machine vision and image processing conference*, eds Rozenn Dahyot, Gerard Lacey, Kenneth Dawson-Howe, François Pitié and David Moloney, Irish Pattern Recognition and Classification Society (2015), 1-139
- Reilly, Richard**, 'Temporal discrimination, a cervical dystonia endophenotype: penetrance and functional correlates', *Movement Disorders*, 29, 6 (2014), 804–811 [O. Kimmich, A. Molloy and R. Whelan]
- 'An evaluation of the role of environmental factors in the disease penetrance of cervical dystonia', *Journal of Neurology, Neurosurgery and Psychiatry*, 86, 3 (2015), 331-335 [A. Molloy, O. Kimmich and L. Williams]
- 'A headset method for measuring the visual temporal discrimination threshold in cervical dystonia', *Tremor and other Hyperkinetic Movements*, 4 (2014), 249 [A. Molloy, O. Kimmich, L. Williams, B. Quinlivan, A. Dabacan, A. Fanning, J.S. Butler, S. O'Riordan, R.B. Reilly and M. Hutchinson]
- 'Altered medial prefrontal activity during dynamic face processing in schizophrenia spectrum patients', *Schizophrenia Research*, 157 (2014), 225-230 [O. Mothersill, D.W. Morris, S. Kelly, E.J. Rose, A. Bokde, R. Reilly, M. Gill, A.P. Corvin and G. Donohoe]
- 'Non-parametric bootstrapping method for measuring the temporal discrimination threshold for movement disorders', *Journal of Neural Engineering*, 12, 4 (2015), 046026 [J.S. Butler, A. Molloy, L. Williams, O. Kimmich, B. Quinlivan, S. O'Riordan, M. Hutchinson and R.B. Reilly]
- 'Temporal discrimination, a cervical dystonia endophenotype penetrance and functional correlates', *Brain*, 29, 6 (2014), 804-11 [M. Hutchinson, O. Kimmich, A. Molloy, R. Whelan, L. Williams, D. Bradley, J. Balsters, F. Molloy, T. Lynch, D. Healy, C. Walsh, S. O'Riordan and R. Reilly]
- 'Signal propagation in the human visual pathways: an effective connectivity analysis', *The Journal of Neuroscience*, 35, 39 (2015), 13501-10 [V. Youssofzadeh, G. Prasad, A.J. Fagan, R.B. Reilly, S. Martens, J.F. Meaney and K. Wong-Lin]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Dual motor-cognitive virtual reality training impacts dual-task performance in freezing of gait', *IEEE Journal of Biomedical and Health Informatics*, 19, 6 (2015), 1855-61 [I. Killane, C. Fearon, L. Newman, C. McDonnell, S.M. Waechter, K. Sons, T. Lynch and R.B. Reilly]
- 'Young women do it better: sexual dimorphism in temporal discrimination', *Frontiers in Neurology*, 6 (2015), 160 [L.J. Williams, J.S. Butler, A. Molloy, E. McGovern, I. Beiser, O. Kimmich, B. Quinlivan, S. O'Riordan, M. Hutchinson and R.B. Reilly]
- 'The impact of dual tasking on cognitive performance in a Parkinson's disease cohort with and without freezing of gait: an EEG and behavioral based approach', *7th International IEEE/EMBS conference on neural engineering*, (2015), 1072-1075 [S.M. Waechter, C. Fearon, C. McDonnell, J. Gallego, B. Quinlivan, I. Killane, J.S. Butler, T. Lynch and R.B. Reilly]
- 'Heart rate regularity changes in older people with orthostatic intolerance', *Lecture Notes in Computer Science*, 9043 (2015), 337-346 [M. Hortelano, R.B. Reilly, L. Cogan and R. Cervigón]
- Vij, Jagdish, 'Renewed focus on the small temperature change of smectic layer spacing in ferroelectric and antiferroelectric LCs', *Liquid Crystals*, 42, 5-6 (2015), 864-876 [Y. Yamada, A. Fukuda, J.K. Vij, N. Hayashi and T. Ando]
- 'Dielectric study of nematic LC built with bent-core molecules', *Molecular Crystals and Liquid Crystals*, 610, 1 (2015), 63-67 [S. Sreenilayam, Y. Panarin and J.K. Vij]
- 'Occurrence of five different orthogonal smectic phases in a bent-core (BC) liquid crystal', *Molecular Crystals and Liquid Crystals*, 610, 1 (2015), 116-121 [S. Sreenilayam, Y. Panarin, J.K. Vij, A. Lehmann and C. Tschierske]
- 'Correction: flexoelectric behavior of bimesogenic liquid crystals in the nematic phase - observation of a new self-assembly pattern at the twist-bend nematic and the nematic interface', *Journal of Materials Chemistry C*, 2, 47 (2014), 10217 [R. Balachandran, V.P. Panov, Y.P. Panarin, J.K. Vij, M.G. Tamba, G.H. Mehl and J.K. Song]
- 'Hierarchical elasticity of bimesogenic liquid crystals with twist-bend nematic phase', *Applied Physics Letters*, 106, 17 (2015), <http://hdl.handle.net/2262/75212> [C. Yun, M.R. Vengatesan, J.K. Vij and J. Song]
- 'Flexoelectric behavior of a bimesogenic liquid crystal', *Molecular Crystals and Liquid Crystals*, 611, 1 (2015), 65-70 [R. Balachandran, V.P. Panov, Y.P. Panarin, M.G. Tamba, G.H. Mehl, J.K. Song and J.K. Vij]
- 'Hierarchy of periodic patterns in the twist-bend nematic phase of mesogenic dimers', *Molecular Crystals and Liquid Crystals*, 611, 1 (2015), 180-185 [V.P. Panov, M.C.M. Varney, I.I. Smalyukh, J.K. Vij, M.G. Tamba and G.H. Mehl]
- 'Dielectric study of liquid crystals with large electroclinic effect', *Molecular Crystals and Liquid Crystals*, 610, 1 (2015), 193-200 [O.E. Panarina, Y.P. Panarin and J.K. Vij]
- 'Molecular crystals and liquid crystals: preface', *Molecular Crystals and Liquid Crystals*, 616, 1 (2015), 251-253 [J.K. Vij]
- 'Electrical and electro-optical parameters of 4'-octyl-4-cyanobiphenyl nematic liquid crystal dispersed with gold and silver nanoparticles', *Liquid Crystals*, 42, 11 (2015), 1580-1590 [M. Mishra, R.S. Dabrowski, J.K. Vij, A. Mishra and R. Dhar]

MECHANICAL AND MANUFACTURING ENGINEERING

- Ahearne, Mark, 'Combined influence of basal media and fibroblast growth factor on the expansion and differentiation capabilities of adipose-derived stem cells', *Cell Regeneration*, 3, 1 (2014), 13 [M. Ahearne, J. Lysaght and A.P. Lynch]
- Aldwell, Barry, 'Characterising the machining of biomedical grade polymers', *Journal of Engineering Manufacture*, 228, 10 (2014), 1237-1251 [B. Aldwell, R. Hanley and G.E. O'Donnell]
- 'The effect of workpiece cooling on the machining of biomedical grade polymers', *9th CIRP conference on intelligent computation in manufacturing engineering (ICME)* (2014), <http://hdl.handle.net/2262/74777> [B. Aldwell, J. O'Mahony and G.E. O'Donnell]

Recent publications – Faculty of Engineering, Mathematics and Science

'A novel method for metal-diamond composite coating deposition with cold spray and formation mechanism', *Scripta Materialia*, 115 (2016), 10-13 [B. Aldwell, S. Yin, K.A. McDonnell, D. Trimble, T. Hussain and R. Lupoi]

Bennett, Gareth, 'Effect of noise reducing components on nose landing gear stability for a mid-size aircraft coupled with vortex shedding and freeplay', *Journal of Sound and Vibration*, 354 (2015), 91-103 [P. Eret, J. Kennedy and G.J. Bennett]

'Novel noise-source-identification technique combining acoustic modal analysis and a coherence-based noise-source identification method', *AIAA Journal*, 53, 10 (2015), 3088-3101 [I.G. Davis and G.J. Bennett]

'Characterization of low noise technologies applied to a full scale fuselage mounted nose landing gear', *44th International congress and exposition on noise control engineering (INTER-NOISE)*, eds G. Maling and C. Burroughs, San Francisco, CA., ASME (2015), V001T01A005; 1-10 [E. Neri, J. Kennedy and G.J. Bennett]

'Aeroacoustic source separation on a full scale nose landing gear featuring combinations of low noise technologies', *ASME noise control and acoustics division conference (INTER-NOISE)*, San Francisco, CA., ASME (2015), V001T01A006; 1-11 [E. Neri, J. Kennedy and G.J. Bennett]

'Landing gear noise reduction by double jet air curtain configuration', *22nd International congress on sound and vibration*, Florence, Italy (2015), 1-8 [K. Zhao, E. Neri, P. Okolo, J. Kennedy and G.J. Bennett]

'CAA noise reduction study of mesh screens applied to landing gears', *22nd International congress on sound and vibration*, Florence, Italy (2015), 1-8 [P. Okolo, K. Zhao, E. Neri, J. Kennedy and G.J. Bennett]

'Spectral, modal and coherence analysis of sum and difference scattering of narrowband noise in turbomachinery', *International Journal of Aeroacoustics*, 15, 1-2 (2016), 180-206 [I. Davis and G.J. Bennett]

'Experimental observations of an installed-on-pylon contra-rotating open rotor with equal blade number in pusher and tractor configuration', *International Journal of Aeroacoustics*, 15, 1-2 (2016), 228-249 [P. Eret, J. Kennedy, P. Castellini, F. Amoroso and G.J. Bennett]

Buckley, Conor, 'Infrapatellar fat pad-derived stem cells maintain their chondrogenic capacity in disease and can be used to engineer cartilaginous grafts of clinically relevant dimensions', *Tissue Engineering. Part A*, 20, 21-22 (2014), 3050-62 [Y. Liu, C.T. Buckley, H.V. Almeida, K.J. Mulhall and D.J. Kelly]

'Decellularized grafts with axially aligned channels for peripheral nerve regeneration', *Journal of the Mechanical Behavior of Biomedical Materials*, 41C (2015), 124-135 [R. Sridharan, R.B. Reilly and C.T. Buckley]

'Coupling freshly isolated CD44(+) infrapatellar fat pad derived stromal cells with a TGF- β 3 eluting cartilage ecm-derived scaffold as a single stage strategy for promoting chondrogenesis', *Advanced Healthcare Materials*, 4, 7 (2015), 1043-1053 [A.V. Almeida, G.M. Cunniffe, T. Vinardell, C.T. Buckley, F.J. O'Brien and D.J. Kelly,]

'Shape-memory porous alginate scaffolds for regeneration of the annulus fibrosus - effect of TGF- β 3 supplementation and oxygen culture conditions', *Acta Biomaterialia*, 10 (2014), 1985-1991 [O. Guillaume, A. Daly, K. Lennon, J. Gansau, S.F. Buckley and C.T. Buckley]

'Elasticity and breaking strength of synthetic suture materials incubated in various equine physiological and pathological solutions', *Equine Veterinary Journal*, 46, 4 (2014), 494-498 [C.M. Kearney, C.T. Buckley, F. Jenner and P.A.J. Brama]

'The effects of dynamic compression on the development of cartilage grafts engineered using bone marrow and infrapatellar fat pad derived stem cells', *Biomedical Materials*, 21, 10 (5) (2015), 055011 [L. Luo, S.D. Thorpe, C.T. Buckley and D.J. Kelly]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Extracellular matrix production by nucleus pulposus and bone marrow stem cells in response to altered oxygen and glucose microenvironments', *Journal of Anatomy*, 227 (2015), 757-766 [S.M. Naqvi and C.T. Buckley]
- 'Tissue engineering whole bones through endochondral ossification: regenerating the distal phalanx', *BioResearch*, 4, 1 (2015), 229-241 [E.J. Sheehy, T. Mesallati, T. Vinardell, L. Kelly, C.T. Buckley and D.J. Kelly]
- 'Knot security of 5 metric (USP 2) sutures: influence of knotting technique, suture material, and incubation time for 14 and 28 days in phosphate buffered saline and inflamed equine peritoneal fluid', *Veterinary Surgery*, 44, 6 (2015), 723-730 [R. Sanders, C. Kearney, C.T. Buckley, F. Jenner and P. Brama]
- 'Enhancing cell migration in shape-memory alginate-collagen composite scaffolds: *in vitro* and *ex vivo* assessment for intervertebral disc repair', *Journal of Biomaterials Applications*, 29, 9 (2015), 1230-1246 [O. Guillaume, S.M. Naqvi, K. Lennon and C.T. Buckley]
- 'Controlled release of TGF- β 3 from cartilage extra cellular matrix derived scaffolds to promote chondrogenesis of human joint tissue derived stem cells', *Acta Biomaterialia*, 10, 10 (2014), 4400-4409 [H.V. Almeida, Y. Liu, G.M. Cunniffe, K.J. Mulhall, A. Matsiko, C.T. Buckley, F.J. O'Brien and D.J. Kelly]
- 'Intrinsic multipotential mesenchymal stromal cell activity in gelatinous Heberden's nodes in osteoarthritis at clinical presentation', *Arthritis Research and Therapy*, 16, 3 (2014), R19 [T.G. Baboolal, S.A. Boxall, S.M. Churchman, C.T. Buckley, E. Jones and D. McGonagle]
- 'Tissue engineering scaled-up, anatomically shaped osteochondral constructs for joint resurfacing', *European Cells and Materials*, 30 (2015), 163-186 [T. Mesallati, E.J. Sheehy, T. Vinardell, C.T. Buckley and D.J. Kelly]
- 'Mechanical comparison of loop and crimp configurations for extracapsular stabilization of the cranial cruciate ligament-deficient stifle', *Veterinary Surgery*, 44, 1 (2015), 50-58 [J. Aisa, I. Calvo, C.T. Buckley and B.M. Kirby]
- 'Differential response of encapsulated nucleus pulposus and bone marrow stem cells in isolation and coculture in alginate and chitosan hydrogels', *Tissue Engineering - Part A*, 21, 1-2 (2015), 288-299 [S.M. Naqvi and C.T. Buckley]
- Geraghty, Dermot**, 'Monitoring the static vehicle load on a heavy goods vehicle', *IEEE 18th international conference on intelligent transportation systems*, Gran Canaria, Spain (2015), 1424-1429 [I. Humphreys, P. McDonald, M. O'Mahony and D. Geraghty]
- 'Investigating the temporal variability of noise in an urban environment', *International Journal of Sustainable Built Environment*, 5, 1 (2016), 34-45 [D. Geraghty and M. O'Mahony]
- Hoey, David**, 'Mechanically stimulated bone cells secrete paracrine factors that regulate osteoprogenitor recruitment, proliferation, and differentiation', *Biochemical and Biophysical Research Communications*, 459, 1 (2015), 118-123 [R.T. Brady, F.J. O'Brien and D.A. Hoey]
- 'Adenylyl cyclase 6 mediates loading-induced bone adaptation *in vivo*', *FASEB Journal*, 28, 3 (2014), 1157-1165 [K. Lee, D. Hoey, M. Spasic, T. Tang, H. Hammond and C. Jacobs]
- 'Correlation of hemodynamic parameters to endothelial cell proliferation in an end to side anastomosis', *Cardiovascular Engineering and Technology*, 5, 1 (2014), 110-118 [L. Browne, S. O'Callaghan, D. Hoey, P. Griffin, T. McGloughlin and M. Walsh]
- 'Oscillatory fluid flow influences primary cilia and microtubule mechanics', *Cytoskeleton*, 71, 7 (2014), 435-445 [L. Espinha, D. Hoey, P. Fernandes, H. Rodrigues and C. Jacobs]
- 'An experimental and computational analysis of primary cilia deflection under fluid flow', *Computer Methods in Biomechanics and Biomedical Engineering*, 17, 1 (2014), 2-10 [M. Downs, A. Nguyen, F. Herzog, D. Hoey and C. Jacobs]

Recent publications – Faculty of Engineering, Mathematics and Science

Kelly, Daniel, 'Biomaterial based modulation of macrophage polarization: a review and suggested design principles', *Materials Today*, 18, 6 (2015), 313-325 [R. Sridharan, A.R. Cameron, D.J. Kelly, C.J. Kearney and F.J. O'Brien]

'Postnatal changes to the mechanical properties of articular cartilage are driven by the evolution of its collagen network', *European Cells and Materials*, 29 (2015), 105-123 [A. Gannon, T. Nagel and D.J. Kelly]

'Coupling freshly isolated CD44(+) infrapatellar fat pad derived stromal cells with a TGF- β 3 eluting cartilage ecm-derived scaffold as a single stage strategy for promoting chondrogenesis', *Advanced Healthcare Materials*, 4, 7 (2015), 1043-1053 [A.V Almeida, G.M. Cuniffe, T. Vinardell, C.T. Buckley, F.J. O'Brien and D.J. Kelly]

'The changing role of the superficial region in determining the dynamic compressive properties of articular cartilage during postnatal development', *Osteoarthritis and Cartilage*, 23, 6 (2015), 975-984 [A.R. Gannon, T. Nagel, A.P. Bell, N.C. Avery and D.J. Kelly]

'Optimizing stem cell engineering for orthopaedic applications', *Journal of the American Academy of Orthopaedic Surgeons*, 22, 1 (2014), 63-65 [J.M. Broderick, D.J. Kelly and K.J. Mulhall]

'A mechanobiological model of endothelial cell migration and proliferation', *Computer Methods in Biomechanics and Biomedical Engineering*, 19, 1 (2016), 74-83 [D. Burke and D.J. Kelly]

'Decellularization of porcine articular cartilage explants and their subsequent repopulation with human chondroprogenitor cells', *Journal of the Mechanical Behavior of Biomedical Materials*, 55 (2015), 21-31 [L. Luo, R. Eswaramoorthy, K.J. Mulhall and D.J. Kelly]

'Tissue engineering scaled-up, anatomically shaped osteochondral constructs for joint resurfacing', *European Cells and Materials*, 30 (2015), 163-186 [T. Mesallati, E.J. Sheehy, T. Vinardell, C.T. Buckley and D.J. Kelly]

'Chondrogenically primed mesenchymal stem cell-seeded alginate hydrogels promote early bone formation in critically-sized defects', *European Polymer Journal*, 72 (2015), 464-472 [G.M. Cuniffe, T. Vinardell, E.M. Thompson, A.C. Daly, A. Matsiko, F.J. O'Brien and D.J. Kelly]

Kelly, Kevin, 'Effective strategies for group work in engineering curricula', *32nd International manufacturing conference*, eds Joe Butterfield and Paul Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/74609> [K. Kelly]

'Orientation estimation using kalman filters with multiple sensors', *32nd International manufacturing conference*, eds Joe Butterfield and Paul Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/74610> [M.F. Cullinan, C. McGinn and K. Kelly]

'Next generation tactile sensing for human-robot interaction in industrial robotics', *32nd International manufacturing conference*, eds Joe Butterfield and Paul Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/74608> [A. Sena and K. Kelly]

'Human in the loop control in robotics for manufacturing', *32nd International manufacturing conference*, eds Joe Butterfield and Paul Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/74607> [A. Sena, C. McGinn, A. McCreevey, C. Donovan and K. Kelly]

'Investigation into a low cost robotic vision system', *32nd International manufacturing conference*, eds Joe Butterfield and Paul Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/74606> [G.S. Sandhu, C. McGinn and K. Kelly]

'MEMS: Making engineering with management a success', *Perspectives on Manufacturing, essays in honour of John Monaghan*, eds Kevin Kelly and Garret O'Donnell, Trinity College Dublin (2015), 45-57 [K. Kelly]

Perspectives on manufacturing, essays in honour of John Monaghan, eds Kevin Kelly and Garret O'Donnell, Trinity College Dublin (2015), 173 + xxiv

'Towards an embodied system-level architecture for mobile robots', *IEEE international conference on advanced robotics*, Istanbul (2015), 536-542 [C. McGinn, M. Cullinan, G. Walsh, C. Donovan and K. Kelly]

Recent publications – Faculty of Engineering, Mathematics and Science

- Kennedy, John**, 'Effect of noise reducing components on nose landing gear stability for a mid-size aircraft coupled with vortex shedding and freeplay', *Journal of Sound and Vibration*, 354 (2015), 91-103 [P. Eret, J. Kennedy and G.J. Bennett]
- 'The influence of the acoustic properties of motorcycle helmets on temporary hearing threshold shift in motorcyclists', *Acta Acustica United with Acustica*, 100 (2014), 1129-1138 [J. Kennedy, N. Holt, M. Carley and I. Walker]
- 'How might people near national roads be affected by traffic noise as electric vehicles increase in number? A laboratory study of subjective valuations of environmental noise', *PLOS ONE*, 11, 3 (2016), <http://dx.doi.org/10.1371/journal.pone.0150516> [I. Walker, J. Kennedy, S. Martin and H. Rice]
- 'Experimental observations of an installed-on-pylon contra-rotating open rotor with equal blade number in pusher and tractor configuration', *International Journal of Aeroacoustics*, 15, 1-2 (2016), 228-249 [P. Eret, J. Kennedy, P. Castellini, F. Amoroso and G.J. Bennett]
- Lally, Cairiona**, 'Imaging and finite element analysis: a methodology for non-invasive characterization of aortic tissue', *Medical Engineering and Physics*, 37, 1 (2015), 48-54 [V. Flamini, A.P. Creane, C.M. Kerskens and C. Lally]
- 'A multi-scale mechanobiological model of in-stent restenosis: deciphering the role of matrix metalloproteinase and extracellular matrix changes', *Computer Methods in Biomechanics and Biomedical Engineering*, 17, 8 (2014), 813-828 [H. Zahedmanesh, H. Van Oosterwyck and C. Lally]
- 'Use of a biodegradable magnesium implant for osseous fixation in four cases', *International Journal of Applied Research in Veterinary Medicine*, 13, 3 (2015), 171-174 [W.T. McCartney, E. Galvin, C. Cummins, C. Lally and B.J. Mac Donald]
- Lupoi, Rocco**, 'Computational prediction of cold spray nozzle performance for the deposition of titanium', *31st International Manufacturing Conference (IMC)*, Cork (2014), 107-112 [M. Meyer and R. Lupoi]
- 'A study on internal defects in friction stir welding of aluminium alloys', *31st International manufacturing conference (IMC)*, Cork (2014), 69-74 [K.J.Q. Cuellar, H. Mitrogiannopoulos, D. Hiller, D. Trimble, R. Lupoi, G. O'Donnell, J. Luis Silveira and S. McFadden]
- 'Performance characterization of Ni60-WC coating on steel processed with supersonic laser deposition', *Defence Technology*, 11 (2015), 35-47 [F. Luo, A. Cockburn, M. Sparkes, R. Lupoi, Z. Chen, W. O'Neill, J. Yao and R. Liu]
- 'Cold Spray', *CIRP encyclopedia of production engineering*, eds Luc Laperriere and Gunther Reinhart (2015), 1-4 [R. Lupoi]
- 'UREAD impact behaviour using non-Newtonian materials', *International Journal of Mechanical Engineering and Applications*, 3, 4 (2015), 57-62 [R. Bouttier, G. Lopes, L. Clarke and R. Lupoi]
- 'An analysis of the particulate flow in cold spray nozzles', *Mechanical Sciences*, 6 (2015), 127-136 [M.C. Meyer and R. Lupoi]
- 'Particle speed analysis in CoBlast', *CIRP Procedia*, 37 (2015), 77-82 [C. Stenson, M.C. Meyer, B. Twomey and R. Lupoi]
- 'Supersonic laser deposition of tungsten', *ASME manufacturing science and engineering conference (MSEC)*, Detroit, USA, 9-13 June (2014), 1-4 [M. Jones, A. Cockburn, M. Sparkes, W. O'Neill and R. Lupoi]
- 'Effect of substrate temperature on interfacial bonding for cold spray of Ni onto Cu', *Journal of Materials Science*, 50 (2015), 7448-7457 [S. Yin, X. Suo, Y. Xie, W. Li, R. Lupoi and H. Liao]
- 'A novel method for metal-diamond composite coating deposition with cold spray and formation mechanism', *Scripta Materialia*, 115 (2016), 10-13 [B. Aldwell, S. Yin, K.A. McDonnell, D. Trimble, T. Hussain and R. Lupoi]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Evaluation of the interfacial bonding between particles and substrate in angular cold spray', *Materials Letters*, 173 (2016), 76-79 [C. Chen, Y. Xie, S. Yin, M. Planche, S. Deng, R. Lupoi and H. Liao]
- 'Gas flow, particle acceleration, and heat transfer in cold spraying', *Journal of Thermal Spray Technology* (2016), 1-23 [S. Yin, M. Meyer, W. Li, H. Liao and R. Lupoi]
- McFadden, Shaun**, 'A study on internal defects in friction stir welding of aluminium alloys', *31st International manufacturing conference (IMC)*, Cork (2014), 69-74 [K. Johanna Q. Cuellar, H. Mitrogiannopoulos, D. Hiller, D. Trimble, R. Lupoi, G. O'Donnell, J.L. Silveira and S. McFadden]
- 'Conditions for CET in a gamma TiAl alloy', *IOP conference series material science and engineering*, 84 (2015), 012088- [R.P. Mooney, J. Lapin, A. Klimová and S. McFadden]
- 'Computer modelling of manufacturing processes: the development of a 2D axisymmetric model of the Bridgman casting process', *32nd International manufacturing conference (IMC)*, eds J. Butterfield and P. Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/75782> [S. Battaglioli, R. P. Mooney, M. Sereďyński, A. Robinson and S. McFadden]
- 'Sensitivity analysis of dendritic growth kinetics in a Bridgman furnace front tracking model', *IOP conference series: materials science and engineering*, 117, 1 (2016), 012012 [R.P. Mooney and S. McFadden]
- McGinn, Conor**, 'Orientation estimation using kalman filters with multiple sensors', *32nd International manufacturing conference (IMC)*, eds Joe Butterfield and Paul Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/74610> [M.F. Cullinan, C. McGinn and K. Kelly]
- 'Human in the loop control in robotics for manufacturing', *32nd International manufacturing conference*, eds Joe Butterfield and Paul Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/74607> [A. Sena, C. McGinn, A. McCreevey, C. Donovan and K. Kelly]
- 'Towards an embodied system-level architecture for mobile robots', *IEEE international conference on advanced robotics*, Istanbul (2015), 536-542 [C. McGinn, M. Cullinan, G. Walsh, C. Donovan and K. Kelly]
- Meskill, Craig**, 'Investigation on parametrically excited motions of point absorbers in regular waves', *Ocean Engineering*, 111 (2016), 67-81 [K. Tarrant and C. Meskill]
- Mooney, Robin**, 'Directional solidification of a TiAl alloy by combined Bridgman and power-down technique', *Metallic Materials*, 53, 3 (2015), 187-197 [R.P. Mooney, U. Hecht, Z. Gabalcová, J. Lapin and S. McFadden]
- 'Conditions for CET in a gamma TiAl alloy', *IOP conference series: material science and engineering*, 84 (2015), DOI:10.1088/1757-899X/84/1/012088 [R.P. Mooney, J. Lapin, A. Klimová and S. McFadden]
- 'Computer modelling of manufacturing processes: the development of a 2D axisymmetric model of the Bridgman casting process', *32nd International manufacturing conference (IMC)*, eds J. Butterfield, P. Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/75782> [S. Battaglioli, R. P. Mooney, M. Sereďyński, A. Robinson and S. McFadden]
- 'Sensitivity analysis of dendritic growth kinetics in a Bridgman furnace front tracking model', *IOP conference series: materials science and engineering*, 117, 1 (2016), 012012 [R.P. Mooney and S. McFadden]
- Murray, Darina**, 'On the assessment of a VOF based compressive interface capturing scheme for the analysis of bubble impact on and bounce from a flat horizontal surface', *International Journal of Multiphase Flow*, 65 (2014), 82-97 [A. Albadawi, D.B. Donoghue, A.J. Robinson, D.B. Murray and Y.M.C. Delaure]
- 'Heat transfer and flow characteristics of a pair of adjacent impinging synthetic jets', *International Journal of Heat and Fluid Flow*, 54 (2015), 153-166 [E. Fanning, T. Persoons and D.B. Murray]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'On the numerical-experimental analysis and scaling of convective heat transfer to pulsating impinging jets', *International Journal of Thermal Sciences*, 98 (2015), 296-311 [S. Alimohammadi, T. Persoons and D.B. Murray]
- 'A numerical-experimental study of heat transfer enhancement using unconfined steady and pulsating turbulent air jet impingement', *15th Int. heat transfer conference (IHTC)*, Kyoto, Japan, Begell House, IHTC Digital Library (2014), <http://dx.doi.org/10.1615/IHTC15.hte.008765> [S. Alimohammadi, T. Persoons and D.B. Murray]
- 'Unsteady natural convection heat transfer from a pair of vertically aligned horizontal cylinders', *International Journal of Heat and Mass Transfer*, 95 (2016), 693-708 [Q. Pelletier, D.B. Murray and T. Persoons]
- 'The dynamics of sliding air bubbles and the effects on surface heat transfer', *International Journal of Heat and Mass Transfer*, 91 (2015), 532-542 [B. Donnelly, R. O'Reilly Meehan, K. Nolan and D.B. Murray]
- Nagel, Thomas**, 'Postnatal changes to the mechanical properties of articular cartilage are driven by the evolution of its collagen network', *European Cells and Materials*, 29 (2015), 105-123 [A. Gannon, T. Nagel and D.J. Kelly]
- O'Donnell, Garret**, 'FPGA based monitoring platform for condition monitoring in cylindrical grinding', *Procedia CIRP*, 14, (2014), 448-453 [I. Humphreys, G. Eisenblätter and G.E. O'Donnell]
- Perspectives on manufacturing, essays in honour of John Monaghan*, eds Kevin Kelly and Garret O'Donnell, Trinity College Dublin (2015), 173 + xxiv
- O'Kelly, Kevin**, 'Cell response to hydroxyapatite surface topography modulated by sintering temperature', *Journal of Biomedical Materials Research* (2015), <http://dx.doi.org/10.1002/jbm.a.35487> [J. Mealy and K. O'Kelly]
- O'Shaughnessy, Seamus**, 'Energy efficiency of electrical infrared heating elements', *Applied Energy*, 162 (2016), 581-588 [K.J. Brown, R. Farrelly, S.M. O'Shaughnessy and A.J. Robinson]
- 'Performance analysis of a prototype small scale electricity-producing biomass cooking stove', *Applied Energy*, 156 (2015), 566-576 [S.M. O'Shaughnessy, M. Deasy, V. Doyle and A. Robinson]
- 'Adaptive design of a prototype electricity-producing biomass cooking stove', *Energy for Sustainable Development*, 28 (2015), 41-51 [S.M. O'Shaughnessy, M.J. Deasy, V. Doyle and A.J. Robinson]
- Persoons, Tim**, 'Heat transfer and flow characteristics of a pair of adjacent impinging synthetic jets', *International Journal of Heat and Fluid Flow*, 54 (2015), 153-166 [E. Fanning, T. Persoons and D.B. Murray]
- 'On the numerical-experimental analysis and scaling of convective heat transfer to pulsating impinging jets', *International Journal of Thermal Sciences*, 98 (2015), 296-311 [S. Alimohammadi, T. Persoons and D.B. Murray]
- 'A numerical-experimental study of heat transfer enhancement using unconfined steady and pulsating turbulent air jet impingement', *15th Int. heat transfer conference (IHTC)*, Kyoto, Japan, Begell House, IHTC Digital Library (2014), <http://dx.doi.org/10.1615/IHTC15.hte.008765> [S. Alimohammadi, T. Persoons and D.B. Murray]
- 'Time-resolved high-dynamic-range particle image velocimetry using local uncertainty estimation', *AIAA Journal*, 53, 8 (2015), 2164-2173 [T. Persoons]
- 'Unsteady natural convection heat transfer from a pair of vertically aligned horizontal cylinders', *International Journal of Heat and Mass Transfer*, 95 (2016), 693-708 [Q. Pelletier, D.B. Murray and T. Persoons]
- Prendergast, Patrick**, 'Forging a future: pressures on higher education', *Perspectives on Manufacturing, essays in honour of John Monaghan*, eds Kevin Kelly and Garret O'Donnell, Trinity College Dublin (2015), 33-44 [P.J. Prendergast]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Global research questions and institutional research strategies', *University Priorities and Constraints*, eds Luc E. Weber and James J. Duderstadt, Economica, London, Paris, Genève (2016), 143-154 [P.J. Prendergast, M. Hennessy]
- 'Ageing enhances the vulnerability of mesenchymal stromal cells to uniaxial tensile strain induced apoptosis', *Journal of Biomechanics*, 49, 3 (2016), 458–462 [K. McKay, P.J. Prendergast, V.A. Campbell]
- Robinson, Anthony**, 'On the assessment of a VOF based compressive interface capturing scheme for the analysis of bubble impact on and bounce from a flat horizontal surface', *International Journal of Multiphase Flow*, 65 (2014), 82-97 [A. Albadawi, D.B. Donoghue, A.J. Robinson, D.B. Murray and Y.M.C. Delauré]
- 'Development of a naturally aspirated thermosiphon for power amplifier cooling', *Journal of Physics: Conference Series*, 525, 1 (2014), 1-7 [S. Siedel, A.J. Robinson, R. Kempers and S. Kerslake]
- 'Investigation of vapour chamber performance with a concentrated heat source', *Journal of Physics: Conference Series*, 525, 1 (2014), 1-10 [E. Ravache, S. Siedel, R. Kempers, A.J. Robinson]
- 'Computer modelling of manufacturing processes: the development of a 2D axisymmetric model of the Bridgman casting process', *32nd International manufacturing conference*, eds J. Butterfield and P. Hermon, Queens University Belfast (2015), <http://hdl.handle.net/2262/75782> [S. Battaglioli, R. P. Mooney, M. Serebyński, A. Robinson and S. McFadden]
- 'Adaptive design of a prototype electricity-producing biomass cooking stove', *Energy for Sustainable Development*, 28 (2015), 41-51 [S. M. O'Shaughnessy, M.J. Deasy, V. Doyle and A.J. Robinson]
- Smyth, Fiona**, 'More than a machine for living in: science, noise and experimental housing', *Construction History*, 29, 2 (2014), 105-122 [F. Smyth]
- Taylor, David**, 'Fatigue in bamboo', *International Journal of Fatigue*, 75 (2015) 51-56 [L. Keogh, P. O'Hanlon, P. O'Reilly and D. Taylor]
- 'Fatigue and creep failure in musculoskeletal tissues', *Reference module in materials science and materials engineering*, ed. Saleem Hashmi, Oxford, UK, Elsevier (2015) 1-71 [D. Taylor]
- 'Fatigue resistant components: what can we learn from nature?', *Journal of Mechanical Engineering Science*, 229 (2015) 1186-1193 [D. Taylor]
- 'The effect of bisphosphonate treatment on the biochemical and cellular events during bone remodelling in response to microinjury stimulation', *European Cells and Materials*, 30 (2015) 271-281 [L. Mulcahy, C. Curtin, R. McCoy, D. Taylor, T.C. Lee and G. Duffy]
- Vinardell, Tatiana**, 'Coupling freshly isolated CD44(+) infrapatellar fat pad derived stromal cells with a TGF- β 3 eluting cartilage ecm-derived scaffold as a single stage strategy for promoting chondrogenesis', *Advanced Healthcare Materials*, 4, 7 (2015), 1043-1053 [A.V. Almeida, G.M. Cunniffe, T. Vinardell, C.T. Buckley, F.J. O'Brien and D.J. Kelly]

Research student

- Lopez Valdes, Alejandro**, 'Objective assessment of spectral ripple discrimination in cochlear implant listeners using cortical evoked responses to an oddball paradigm', *PLOS ONE*, 9, 3 (2014), e90044 [A. Lopez Valdes, M. McLaughlin, L. Viani, P. Walshe, J. Smith, F.G. Zeng and R.B. Reilly]

**Recent publications – Faculty of Engineering, Mathematics and Science
School of Genetics and Microbiology**

GENETICS

- Bracken, Adrian**, 'A chromatin-independent role of polycomb-like 1 to stabilize p53 and promote cellular quiescence', *Genes and Development*, 29, 21 (2015), 2231-43 [G.L. Brien, E. Healy, E. Jerman, A.P. Bracken *et al*]
- 'PRC2 mediated H3K27 methylations in cellular identity and cancer', *Current Opinion in Cell Biology*, 37 (2015), 42-48 [E. Conway, E. Healy and A.P. Bracken]
- 'Delineating transcriptional networks of prognostic gene signatures refines treatment recommendations for lymph node-negative breast cancer patients', *FEBS J.*, 282, 18 (2015), 3455-3473 [F. Lanigan, G.L. Brien, Y. Fan, A.P. Bracken *et al*]
- 'Detection of novel germline mutations for breast cancer in non-BRCA1/2 families', *FEBS J.*, 282, 17 (2015), 3424-3437 [F. Aloraifi, T. McDevitt, R. Martiniano, A.P. Bracken *et al*]
- Bradley, Daniel**, 'Homozygosity mapping in an Irish ALS case-control cohort describes local demographic phenomena and points towards potential recessive risk loci', *Genomics*, 105, 4 (2015), 237-241 [R.L. McLaughlin, K.P. Kenna, A. Vajda, M. Heverin, S. Byrne, C.G. Donaghy, S. Cronin, D.G. Bradley and O. Hardiman]
- Campbell, Matthew**, 'First-in-class thyrotropin-releasing hormone (TRH)-based compound binds to a pharmacologically distinct TRH receptor subtype in human brain and is effective in neurodegenerative models', *Neuropharmacology*, 89C (2015), 193-203 [J.A. Kelly, N.T. Boyle and N. Cole *et al*]
- 'Targeting the NLRP3 inflammasome in chronic inflammatory diseases: current perspectives', *Journal of Inflammation Research*, 8 (2015), 15-27 [E. Ozaki, M. Campbell and S.L. Doyle]
- 'GlycoRDF: an ontology to standardize glycomics data in RDF', *Bioinformatics*, 31, 6 (2015), 919-925 [R. Ranzinger, K.F. Aoki-Kinoshita, M.P. Campbell *et al*]
- 'MIRAGE: the minimum information required for a glycomics experiment', *Glycobiology*, 24, 5 (2014), 402-406 [W.S. York, S. Agravat, K.F. Aoki-Kinoshita *et al*]
- 'Relative quantitation of multi-antennary N-glycan classes: combining PGC-LC-ESI-MS with exoglycosidase digestion', *Analyst*, 140, 16 (2015), 5444-5449 [J.L. Abrahams, N.H. Packer and M.P. Campbell]
- 'Differential apicobasal VEGF signaling at vascular blood-neural barriers', *Developmental Cell*, 30, 5 (2014), 541-552 [N. Hudson, M.B. Powner, M.H. Sarker, T. Burgoyne, M. Campbell, Z.K. Ockrim, R. Martinelli, C.E. Futter, M.A. Grant, P.A. Fraser, D.T. Shima, J. Greenwood and P. Turowski]
- 'Reply to IL-18 is not therapeutic for neovascular age-related macular degeneration', *Nature Medicine*, 20, 12 (2014), 1376-1377 [S.L. Doyle, P. Adamson, F.J. López, P. Humphries and M. Campbell]
- 'Glycibase and autoGU: resources for interpreting HPLC-glycan data', *Glycoinformatics: Methods in Molecular Biology*, 1273 (2015), 17-28 [M.P. Campbell, L. Royle and P.M. Rudd]
- Fares, Mario**, 'Survival and innovation: the role of mutational robustness in evolution', *Biochimica* (2014), <http://hdl.handle.net/2262/74023> [M.A. Fares]
- 'The origins of mutational robustness', *Trends in Genetics*, 31, 7 (2015), 373-381 [M.A. Fares]
- 'Functional conservation of an ancestral pellino protein in helminth species', *Scientific Reports*, 5 (2015), DOI:10.1038/srep11687 [C.D. Cluxton, B.E. Caffrey, G.K. Kinsella, (...), M.A. Fares and P.G. Fallon]
- 'Preservation of genetic and regulatory robustness in ancient gene duplicates of *Saccharomyces cerevisiae*', *Genome Research*, 24, 11 (2014), 1830-41 [O.M. Keane, C. Toft, L. Carretero-Paulet, G.W. Jones and M.A. Fares]

Recent publications – Faculty of Engineering, Mathematics and Science

- Humphries, Marian**, 'IL-18 attenuates experimental choroidal neovascularization as a potential therapy for wet age-related macular degeneration', *Science Translational Medicine*, 6 (2014), 230 [S.L. Doyle, E. Ozaki, K. Brennan, M.M. Humphries *et al*]
- 'Activation of Bax in three models of retinitis pigmentosa', *Investigative Ophthalmology and Visual Science*, 55, 6 (2014), 3555-3562 [A. Comitato, D. Sanges, A. Rossi, M.M. Humphries and V. Marigo]
- 'Autoregulated paracellular clearance of amyloid- β ; across the blood-brain barrier', *Science Advances*, 1, 8 (2015), 10.1126/sciadv.1500472 [J. Keaney, D.M. Walsh, T. O'Malley, (...), M.M. Humphries, J.J. Callanan, F.M. Brett, M.A. Farrell, P. Humphries and M. Campbell]
- Humphries, Peter**, 'Electroretinographic assessment of rod- and cone-mediated bipolar cell pathways using flicker stimuli in mice', *Scientific Reports*, 5 (2015), 10731 [N. Tanimoto, V. Sothilingam, M. Kondo, (...), P. Humphries and M.W. Seeliger]
- Kavanagh, Thomas**, 'Localized hypermutation and associated gene losses in legume chloroplast genomes', *Genome Research*, 24, 6 (2014), 1052 [A.M. Magee, S. Aspinall, D.W. Rice, (...), J.C.Gray, T.A. Kavanagh and K.H. Wolfe]
- Labrador, Juan**, 'The Unc-5 receptor is directly regulated by Tinman in the developing *Drosophila* dorsal vessel', *PLOS ONE*, 10, 9 (2015), e0137688 [J. Asadzadeh, N. Neligan, J.J. Canabal-Alvear, A.C. Daly, S.G. Kramer and J.P. Labrador]
- 'Tinman regulates NetrinB in the cardioblasts of the *Drosophila* dorsal vessel', *PLOS ONE*, 11, 2 (2016), e0148526 [J. Asadzadeh, N. Neligan, S.G. Kramer and J.P. Labrador]
- Martin, Seamus**, 'Concurrent MEK and autophagy inhibition is required to restore cell death associated danger-signalling in vemurafenib-resistant melanoma cells', *Biochemical Pharmacology*, 93, 3 (2015), 290-304 [S. Martin, A.M. Dudek-Peri, H. Maes, A.D. Garg, M. Gabrysiak, S. Demirsoy, J.V. Swinnen, P. Agostinis]
- 'Autophagy in malignant transformation and cancer progression', *EMBO Journal*, 34, 7 (2015), 856-880 [L. Galluzzi, F. Pietrocola, (...), S.J. Martin, J. Penninger, M. Piacentini, D.C. Rubinsztein, H.U. Simon, A. Simonsen, A.M. Thorburn, G. Velasco, K.M. Ryan and G. Kroemer]
- 'Proteolytic processing of interleukin-1 family cytokines: variations on a common theme', *Immunity*, 42, 6 (2015), 991-1004 [I.S. Afonina, C. Müller, S.J. Martin and R. Beyaert]
- 'Diverse activators of the NLRP3 inflammasome promote IL-1 β secretion by triggering necrosis', *Cell Reports*, 11, 10 (2015), 1535-1548 [S.P. Cullen, C.J. Kearney, D.M. Clancy and S.J. Martin]
- 'The FEBS Journal in 2015: onwards and upwards', *FEBS Journal*, 282, 1 (2015), 1-3 [S.J. Martin]
- 'Fas and TRAIL 'death receptors' as initiators of inflammation: implications for cancer', *Semin Cell Dev Biol.*, 39 (2015), 26–34 [S.P. Cullen and S.J. Martin]
- McLysaght, Aoife**, 'New genes from non-coding sequence: the role of de novo protein-coding genes in eukaryotic evolutionary innovation', *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, 370, 1678 (2015), <http://dx.doi.org/10.1098/rstb.2014.0332> [A. McLysaght and D. Guerzoni]
- 'A chromatin-independent role of polycomb-like 1 to stabilize p53 and promote cellular quiescence', *Genes and Development*, 29, 21 (2015), 2231-43 [G.L. Brien, E. Healy, (...), A. McLysaght, D.J. O'Connell, S.A. Armstrong and A.P. Bracken]
- Ramaswami, Mani**, 'A novel paradigm for nonassociative long-term memory in *Drosophila*: predator-induced changes in oviposition behavior', *Genetics*, 199, 4 (2015), 1143-1157 [B.Z. Kacsoh, J. Bozler, S. Hodge, M. Ramaswami and G. Bosco]
- 'Social communication of predator-induced changes in *Drosophila* behavior and germline physiology', *eLife*, 4, MAY (2015), 07423- [B.Z. Kacsoh, J. Bozler, M. Ramaswami and G. Bosco]

Recent publications – Faculty of Engineering, Mathematics and Science

Wellmer, Frank, 'Identification of direct targets of plant transcription factors using the GR fusion technique', *Methods in Molecular Biology*, 1284 (2015), 123-138 [N. Yamaguchi, C.M. Winter, F. Wellmer and D. Wagner]

'Patterns of gene expression during *Arabidopsis* flower development from the time of initiation to maturation', *BMC Genomics*, 16 (2015), 488- [P.T. Ryan, D.S. ÓMaoiléidigh, H.G. Drost, K. Kwasniewska, A. Gabel, I. Grosse, E. Graciet, M. Quint and F. Wellmer]

'Gene network analysis in *Arabidopsis thaliana* flower development through dynamic gene perturbations', *The Plant Journal*, 83 (2015), 344-358 [D.S. O Maoileidigh, B. Thomson, A. Raganelli, S.E. Wuest, P.T. Ryan, K. Kwasniewska, C.C. Carles, E. Graciet and F. Wellmer]

'My favourite flowering image: floral organs with trichomes', *Journal of Experimental Botany*, 66 (2015), 9-10 [F. Wellmer, D. Stewart and D.S. O Maoileidigh]

'Strategies for performing dynamic gene perturbation experiments in flowers', *Bio-protocol*, 6 (2016), e1774 [D.S. O Maoileidigh, E. Graciet and F. Wellmer]

'Post-embryonic hourglass patterns mark ontogenetic transitions in plant development', *Molecular Biology and Evolution*, 33 (2016), 1158-1163 [H.G.Drost, J. Bellstaedt, (...), F. Wellmer, I. Grosse and M. Quint]

'The N-end rule pathway regulates pathogen responses in plants', *Scientific Reports*, 6 (2016), 26020 [R. de Marchi, M. Sorel, B. Mooney, (...), F. Wellmer, S. Rivas, and E. Graciet]

MICROBIOLOGY

Bell, Angus, 'Two crystal structures of the FK506-binding domain of *Plasmodium falciparum* FKBP35 in complex with rapamycin at high resolution', *Acta Crystallographica Section D: Biological Crystallography*, 71 (2015), 1319-1327 [A. Bianchin, F. Allemand, A. Bell, A.J. Chubb and J.F. Guichou]

'Design and evaluation of antimalarial peptides derived from prediction of short linear motifs in proteins related to erythrocyte invasion', *PLOS ONE*, 10, 6 (2015), <http://hdl.handle.net/2262/75118> [A. Bianchin, A. Bell, A.J. Chubb, N. Doolan, D. Leneghan, I. Stavropoulos, D.C. Shields and C. Mooney]

'Immunophilin-protein interactions in *Plasmodium falciparum*', *Parasitology* (2015), 1-11 [D. Leneghan and A. Bell]

Bond, Ursula, 'Engineering *Saccharomyces pastorianus* for the co-utilisation of xylose and cellulose from biomass', *Microbial Cell Factories*, 14, 61 (2015), 1-11 [W. Kricka, J. Fitzpatrick, T.C. James and U. Bond]

'Challenges for the production of bioethanol from biomass using recombinant yeasts', *Advances in Applied Microbiology*, 92 (2015), 89-125 [W. Kricka, J. Fitzpatrick and U. Bond]

'Structure-function analyses of the interactions between Rab11 and Rab14 small GTPases with their shared effector Rab coupling protein (RCP)', *Journal of Biological Chemistry*, 290, 30 (2015), 18817-18832 [P. Lall, A.J. Lindsay, S. Hanscom, (...), M.W. McCaffrey and A.R. Khan]

Dorman, Charles, 'Agnes Fouet - departing Editor-in-Chief', *Microbiology*, 161, 6 (2015), 1149-1149 [C.J. Dorman]

'Genes and society', Trinity College Dublin research themes, Trinity College Dublin (2014), [C.J. Dorman]

'Re-engineering cellular physiology by rewiring high-level global regulatory genes', *Scientific Reports*, 5 (2015), 17653 [S. Fitzgerald, S.C. Dillon, C. Tzu-Chiao, H.L. Wiencko, K. Hokamp, A.D.S. Cameron and C.J. Dorman]

Geoghegan, Joan, 'Role for the A domain of unprocessed accumulation-associated protein (Aap) in the attachment phase of the *Staphylococcus epidermidis* biofilm phenotype', *Journal of Bacteriology*, 196, 24 (2014), 4268-4275 [B.P. Conlon, J.A. Geoghegan, E.M. Waters, H. McCarthy, S.E. Rowe, J.R. Davies, C.R. Schaeffer, T.J. Foster, P.D. Fey and J.P.O'Garra]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Manipulation of autophagy in phagocytes facilitates *Staphylococcus aureus* bloodstream infection', *Infection and Immunity*, 83, 9 (2015), 3445- [K.M. O'Keeffe, M.M. Wilk, (...), J.A. Geoghegan and R.M. McLoughlin]
- 'Fibronectin binding proteins SpsD and SpsL both support invasion of canine epithelial cells by *Staphylococcus pseudintermedius*', *Infection and Immunity*, 83, 10 (2015), 4093-102 [G. Pietrocola, V. Gianotti, A. Richards, G. Nobile, J.A. Geoghegan, S. Rindi, I.R. Monk, A.S. Bordt, T.J. Foster, J.R. Fitzgerald and P. Speziale]
- '*Staphylococcus aureus* fibronectin-binding protein A mediates cell-cell adhesion through low-affinity homophilic bonds', *mBio*, 6, 3 (2015), e00413-15 [P. Herman-Bausier, S. El-Kirat-Chatel, T.J. Foster, J.A. Geoghegan and Y.F. Dufrene]
- 'Memory Th1 cells are protective in invasive *Staphylococcus aureus* infection', *PLoS Pathogens*, 11, 11 (2015), e1005226 [A.F. Brown, A.G. Murphy, (...), J.A. Geoghegan, E.C. Lavelle, T.R. Rogers and R.M. McLoughlin]
- 'Zinc-dependent mechanical properties of *Staphylococcus aureus* biofilm-forming surface protein SasG', *PNAS*, 113, 2 (2016), 410-5 [C. Formosa-Dague, P. Speziale, T.J. Foster, J.A. Geoghegan and Y.F. Dufrene]
- Hinton, Jay, 'Comparative analysis of *Salmonella* susceptibility and tolerance to the biocide chlorhexidine identifies a complex cellular defense network', *Frontiers in Microbiology*, 5 (2014), 373 [O. Condell, K.A. Power, (...), J.C. Hinton, J.E. Nally and S. Fanning]
- Kroger, Carsten, 'Bistable expression of CsgD in *Salmonella enterica* serovar Typhimurium connects virulence to persistence', *Infection and Immunity*, 83, 6 (2015), 2312-2326 [K.D. MacKenzie, (...), C. Kröger, A.D. Cameron, H.G. Townsend, W. Köster and A.P. White]
- 'The orphan regulator ReiD of *Salmonella enterica* is essential for myo-inositol utilization', *Molecular Microbiology*, 94, 3 (2014), 700-712 [J.E. Rothhardt, C. Kröger, S.P. Broadley and T.M. Fuchs]
- Roberts, Kim, 'Ferret airway epithelial cell cultures support efficient replication of influenza B virus but not mumps virus', *The Journal of General Virology*, 96, 8 (2015), 2092-8 [R.A. Elderfield, L. Parker, P. Stilwell, K.L. Roberts, S. Schepelmann and W.S. Barclay]
- Russell, Ronald, 'Overcoming the problem of residual microbial contamination in dental suction units left by conventional disinfection using novel single component suction handpieces in combination with automated flood disinfection', *Journal of Dentistry*, 43, 10 (2015), 1268-1279 [M.A. Boyle, M.J. O'Donnell, R.J. Russell, N. Galvin, J. Swan and D.C. Coleman]

School of Mathematics

- Britto, Ruth, 'Cuts and coproducts of massive triangle diagrams', *Journal of High Energy Physics*, 1507 (2015), 111 [S. Abreu, R. Britto and H. Grönqvist]
- Dotsenko, Vladimir, 'Givental action and trivialization of circle action', *Journal de l'École Polytechnique - Mathématiques*, 2 (2015), 213-246 [V.Dotsenko, S.Shadrin and B.Vallette]
- 'A tale of three homotopies', *Applied Categorical Structures* (2015), 1-29 [V.Dotsenko and N.Poncin]
- Arithmetics of quadratic forms*, Moscow, MCCME (2015), 1-40 [V.Dotsenko]
- Karageorgis, Paschalis, 'Refined blow-up results for nonlinear fourth order differential equations', *Communications on Pure and Applied Analysis*, 14, 2 (2015), 677-693 [P. Karageorgis and F. Gazzola]
- Manschot, Jan, 'The asymptotic profile of χ_y genera of Hilbert schemes of points on K3 surfaces', *Comm. Number Theory and Physics*, 9, 2 (2015), 413-435 [M. Zapata Rolon and J. Manschot]

Recent publications – Faculty of Engineering, Mathematics and Science

- Nicoara, Andreea**, 'A nullstellensatz for Łojasiewicz ideals', *Revista Matemática Iberoamericana*, 30, 4 (2014), 1479-1487 [F. Acquistapace, F. Broglia and A. Nicoara]
- 'Failure of the Weierstrass preparation theorem in quasi-analytic Denjoy-Carleman rings', *Advances in Mathematics*, 258 (2014), 397-413 [F. Acquistapace, F. Broglia, M. Bronshtein, A. Nicoara and N. Zobin]
- 'On the relationship between D'Angelo q -Type and Catlin q -Type', *Journal of Geometric Analysis*, 25, 3 (2015), 1701-1719 [V. Brinzanescu and A.C. Nicoara]
- Oldham, Elizabeth**, 'Technology acceptance and ePortfolios: an intervention in a college of education', *International technology, education and development conference (IATED)*, eds L.Gomez Chova, A. Lopez Martinez and I. Candel Torres, Valencia, Spain, Academy (2014), 6328- 6336 [A. Egan, A. FitzGibbon and E. Oldham]
- 'So you're a technology expert - what can you do?', *International technology, education and development conference (IATED)*, eds L.Gomez Chova, A. Lopez Martinez and I. Candel Torres, Valencia, Spain, Academy (2014), 6167-6176 [A. Egan, A. FitzGibbon, E. Oldham and K. Johnston]
- 'Ratio and proportional thinking: a study in an Irish context', *British society for research into learning mathematics day conference*, ed. C. Smith, Dublin, BSRLM (2015), 78-83 [P. Stafford, E. Oldham and V. O'Dowd]
- 'From learner to teacher: using reflection to develop mathematical teacher identity', *39th Annual association for teacher education in Europe (ATEE)*, eds L. Leite, M.A. Flores, L. Dourado, M. T. Vilaca and S. Morgado, Braga, Portugal, (2015), 367-375 [P. Eaton, C. Horn, M. Liston, E. Oldham and M. O'Reilly]
- 'Investigating representations of ratio among prospective primary teachers in Ireland: implications for teacher education', *39th Annual association for teacher education in Europe*, eds L. Leite, M.A. Flores, L. Dourado, M. T. Vilaca and S. Morgado, Braga, Portugal, ATEE (2015), 329-339 [E. Oldham, P. Stafford and V. O'Dowd]
- 'The programming studio: investigating teachers' readiness for teaching programming in the island of Ireland', *39th Annual association for teacher education in Europe (ATEE)*, eds L. Leite, M.A. Flores, L. Dourado, M. T. Vilaca and S. Morgado, Braga, Portugal, (2015), 299-309 [P. Cowan, E. Oldham and A. FitzGibbon]
- 'A critique of the current trend to implement computing in schools', *Pedagogika*, 65, 3 (2015), 292-300 [N. Bresnihan, R. Millwood, E. Oldham, G. Strong and D. Wilson]
- 'Technology-mediated realistic mathematics education and the Bridge21 model: a teaching experiment', *9th Congress of European research in mathematics education*, eds Konrad Krainer and Nad'a Vondrová, Prague, Czech Republic, Charles University in Prague, Faculty of Education and ERME (2015), 2487-2494 [A. Bray, E. Oldham and B. Tangney]
- Parnachev, Andrei**, 'Conformal blocks and negativity at large central charge', *Journal of High Energy Physics*, 2014, 9 (2014), 1-25 [M. Kulaxizi, A. Parnachev and G. Policastro]
- 'Topological entanglement entropy, ground state degeneracy and holography', *Journal of High Energy Physics*, 2015, 10 (2015), [http://dx.doi.org/10.1007/JHEP10\(2015\)092](http://dx.doi.org/10.1007/JHEP10(2015)092) [A. Parnachev and N. Poovuttikul]
- Shatashvili, Samson**, Erratum to: 'Darboux coordinates, Yang-Yang functional, and gauge theory' (*Theoretical and Mathematical Physics*, 181, 1 (2014), 1206-1234, 10.1007/s11232-014-0209-3), *Theoretical and Mathematical Physics*, 182, 2 (2015), 311 [N.A. Nekrasov, A.A. Rosly and S.L. Shatashvili]
- 'Gauge theory angle at integrability', *International conference of mathematicians*, eds Sun Young Jang, Young Rock Kim, Dae-Woong Lee and Ikkwon Yie, Seoul, Korea, Kyung Moon SA Co. Ltd (2014), 1195-1222 [S.L. Shatashvili]

Recent publications – Faculty of Engineering, Mathematics and Science

Volin, Dmytro, 'Quantum spectral curve as a tool for a perturbative quantum field theory', *Nuclear Physics B*, 899 (2015), 810-847 [C. Marboe and D. Volin]

'Quantum spectral curve for planar $N = 4$ super-yang-mills theory', *Physical Review Letters*, 112, 1 (2014), <http://dx.doi.org/10.1103/PhysRevLett.112.011602> [N. Gromov, V. Kazakov, S. Leurent and D. Volin]

'Quantum spectral curve for arbitrary state/operator in AdS_5/CFT_4 ', *Journal of High Energy Physics*, 2015, 9 (2015), [http://dx.doi.org/10.1007/JHEP09\(2015\)187](http://dx.doi.org/10.1007/JHEP09(2015)187) [N. Gromov, V. Kazakov, S. Leurent and D. Volin]

'Six-loop anomalous dimension of twist-two operators in planar $N = 4$ SYM theory', *Journal of High Energy Physics*, 2015, 7 (2015), [http://dx.doi.org/10.1007/JHEP07\(2015\)084](http://dx.doi.org/10.1007/JHEP07(2015)084) [C. Marboe, V. Velizhanin, V. Velizhanin and D. Volin]

Zaitsev, Dmitri, 'Convergent normal form and canonical connection for hypersurfaces of finite type in C^2 ', *Advances in Mathematics*, 281 (2015), 670-705 [I. Kossovskiy and D. Zaitsev]

School of Natural Sciences

BOTANY

Hodkinson, Trevor, 'Media manipulations and the culture of beneficial fungal root endophytes', *International Journal of Biology*, 7 (2015), 95-102 [B.R. Murphy, F.M. Doohan and T.R. Hodkinson]

'Persistent fungal root endophytes isolated from a wild barley species suppress seed-borne infections in a barley cultivar', *BioControl*, 60, 2 (2015), 281-292 [B.R. Murphy, F.M. Doohan and T.R. Hodkinson]

'Fungal endophytes enhance agronomically important traits in severely drought-stressed barley', *Journal of Agronomy and Crop Science* (2015), <http://dx.doi.org/10.1111/jac.12139> [B.R. Murphy, L.M. Nieto, F.M. Doohan and T.R. Hodkinson]

'Profundae diversitas: the uncharted genetic diversity in a newly studied group of fungal root endophytes', *Mycology* (2015), <http://dx.doi.org/10.1080/21501203.2015.1070213> [B.R. Murphy, L.M. Nieto, F.M. Doohan and T.R. Hodkinson]

'The difference between life and death: fungal endophytes improve survival and increase biomass in multiply-stressed barley', *Global Journal of Science Frontier Research*, 15, 5 (2015), 1-9 [B.R. Murphy, L.M. Nieto, F.M. Doohan and T.R. Hodkinson]

'Grasslands for forage and bioenergy use: traits and biotechnological implications', *Grassland Science in Europe*, 19 (2014), 438-449 [S. Barth, M. Jones, T.R. Hodkinson, J. Finnan, M. Klaas and Z. Wang]

'Plastid genome sequencing reveals biogeographical structure and extensive population genetic variation in wild populations of *Phalaris arundinacea* L. in north-western Europe', *GCB Bioenergy* (2016), <http://dx.doi.org/10.1111/gcbb.123> [A. Perdereau, M. Klaas, S. Barth and T.R. Hodkinson]

'Bleeding canker of horse chestnut (*Aesculus hippocastanum*) in Ireland: incidence, severity and characterization using DNA sequences and real-time PCR', *Plant Pathology* (2016), <http://dx.doi.org/10.1111/ppa.12529> [A. McEvoy, F. O'Regan, C.C. Fleming, B.P. Moreland, J.A. Pollock, B.W. McGuinness and T.R. Hodkinson]

'Variation in sequences containing microsatellite motifs in the perennial biomass and forage grass, *Phalaris arundinacea* (Poaceae)', *BMC Research Notes*, 9 (2016), 184- [S. Barth, M.J. Jankowska, T.R. Hodkinson, T. Vellani and M. Klaas]

'A taxonomic revision of the genus *Digitaria* (Panicoidae: Poaceae) in mainland Southeast Asia', *Phytotaxa*, 246, 4 (2016), 248-280 [B. Boonsuk, P. Chantaranonthai and T.R. Hodkinson]

Recent publications – Faculty of Engineering, Mathematics and Science

Jones, Michael, 'Influence of climatic variables on *Cyperus papyrus* stomatal conductance in Lubigi wetland, Kampala, Uganda', *African Journal of Aquatic Science* (2015), <http://dx.doi.org/10.2989/16085914.2015.1037712> [A. Opio, M.B. Jones, F. Kansiiime and T. Otiiti]

'Dissolved organic carbon in a tropical wetland dominated by *Cyperus papyrus*', *Wetlands Ecology and Management* (2015), <http://dx.doi.org/10.1007/s11273-015-9437-z> [A. Opio, M.B. Jones, F. Kansiiime and T. Otiiti]

'Reviewing the carbon cycle dynamics and carbon sequestration potential of *Cyperus papyrus* L. wetlands in tropical Africa', *Wetlands Ecology and Management*, 22, 2 (2014), 143-155 [M. Saunders, F. Kansiiime and M. Jones]

'Assessing the impact of within crop heterogeneity ('patchiness') in young *Miscanthus x giganteus* fields on economic feasibility and soil carbon sequestration', *Global Change Biology: Bioenergy*, 6, 5 (2014), 566-576 [J. Zimmermann, D. Styles, A. Hastings, J. Dauber and M.B. Jones]

'Are the benefits of yield responses to nitrogen fertilizer application in the bioenergy crop *Miscanthus x giganteus* offset by increased soil emissions of nitrous oxide?', *Global Change Biology - Bioenergy*, 7 (2014), 145-152 [B. Roth, J.M. Finnan, M.B. Jones, J.I. Burke and M.L. Williams]

Kelly, Daniel, 'Can air humidity and temperature regimes within cloud forest canopies be predicted from bryophyte and lichen cover?', *Ecological Indicators*, 56 (2015), 1-5 [S. Batke, B. Murphy, N. Hill and D. Kelly]

'Ecology and mode-of-life explain lifespan variation in birds and mammals', *Proceedings. Biological sciences / The Royal Society*, 281, 1784 (2014), 20140298 [K. Healy, T. Guillerme, S. Finlay, A. Kane, S.B. Kelly, D. McClean, D.J. Kelly, I. Donohue, A.L. Jackson and N. Cooper]

Lanigan, Gary, 'Interannual variation in nitrous oxide emissions from perennial ryegrass/white clover grassland used for dairy production', *Global Change Biology*, 20, 10 (2014), 3137-46 [W. Burchill, D. Li, G.J. Lanigan, M. Williams and J. Humphreys]

Mitchell, Fraser, 'Predation has no competition: factors influencing space and resource use by echinoids in deep-sea coral habitats, as evidenced by continuous video transects', *Marine Ecology*, 36, 4 (2015), 1454-1467 [A. Stevenson, F. Mitchell and J. Davies]

'Are Ireland's reintroduced *Pinus sylvestris* forests floristically analogous to their native counterparts in oceanic north-west Europe?', *Biology and Environment: Proceedings of the Royal Irish Academy*, 115B (2015), 97-114 [J.R. Roche, F.J.G. Mitchell, S. Waldren and J.E. Bjørndalen]

'Drivers of temporal changes in temperate forest plant diversity vary across spatial scales', *Global Change Biology*, 21 (2015), 3726-3737 [M. Bernhardt-Römermann, L. Baeten, D. Craven, P. De Frenne, (...), F.J.G. Mitchell *et al*]

'Pine stumps in Irish peats: is their occurrence a valid proxy climate indicator?', *Journal of Quaternary Science*, 30 (2015), 489-496 [A.H. McGeever and F.J.G. Mitchell]

'Seeing the woods for the trees: the history of woodlands and wood use revealed from archaeological excavations in the Irish Midlands', *Irish Forestry*, 72 (2015), 205-226 [E. O'Carroll, and F.J.G. Mitchell]

'Evidence of nutrient partitioning in coexisting deep-sea echinoids, and seasonal dietary shifts in seasonal breeders: Perspectives from stable isotope analyses', *Progress in Oceanography*, 141 (2016), 44-59 [A. Stevenson and F.J.G. Mitchell]

'Identifying past fire regimes throughout the Holocene in Ireland using new and established methods of charcoal analysis', *Quaternary Science Reviews*, 137 (2016), 45-53 [D. Hawthorne and F.J.G. Mitchell]

Parnell, John, 'Typification of two newly recorded species of *Ampelocissus* (Vitaceae) for Thailand', *Phytotaxa*, 212 (2015), 149-156 [A. Trias-Blasi, M.F. Watson, K. Chayamarit and J. Parnell]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'A taxonomic revision of *Pterisanthes* (Vitaceae) in Thailand and a new Thai record for *Pterisanthes cissoides*', *Phytotaxa*, 159 (2014), 95-104 [A. Trias-Blasi, K. Chayamarit, A. Teerawatananon and J.A.N. Parnell]
- Flora of Thailand*, Bangkok, Office of the Forest Herbarium, 12, 2 (2014), 303-670 [T. Santisuk, H. Balslev, M. Newman, (...), J. Parnell, D. Middleton *et al*]
- 'A re-examination of the life and work of A.F.G. Kerr and of his colleagues and friends', *Thai Forest Bulletin*, 43 (2015), 111-131 [J.A.N. Parnell, F. Pilla and the Thai Biogeography Group]
- 'A revision of *Syzygium gaertn.* (Myrtaceae) in Indochina (Cambodia, Laos and Vietnam)', *Adansonia*, 37, 1 (2015), 179-275 [W.K. Soh and J. Parnell]
- Flora of Thailand*, Bangkok, Office of the Forest Herbarium 13, (1) (2015), 1-141+XVIpp [T. Santisuk, H. Balslev, M. Newman, (...), J. Parnell, D. Middleton *et al*]
- '*Dendromyza hiepkoana* sp. nov. from Irian Jaya and *D. staufferi* sp. nov. from Papua New Guinea (Amphorogyanaceae)', *Nordic Journal of Botany*, 34 (2016), 169-173 [J. Macklin and J. Parnell]
- Penk, Marcin**, 'Elevated temperatures interact with habitat quality to undermine survival of ectotherms in climatic refugia', *Diversity and Distributions*, 21 (2015), 200-210 [M. Penk, I. Donohue, V. Récoules and K. Irvine]
- 'Seasonal migration of a glacial relict mysid into the littoral zone and its co-occurrence with an introduced competitor', *Hydrobiologia*, 726 (2014), 1-11 [M. Penk and D. Minchin]
- Power, Eileen**, 'The potential for indirect effects between co-flowering plants via shared pollinators depends on resource abundance, accessibility and relatedness', *Ecology Letters*, 17 (2014), 1389-1399 [L. Carvalheiro, J. Biesmeijer, (...), E. Power, M. Rundlöf, H. Smith, J.C. Stout, K. Temitope, T. Tschamtkke, T. Tscheulin, M. Vila and W.E. Kunin]
- 'The PREDICTS database: a global database of how local terrestrial biodiversity responds to human impacts', *Ecology and Evolution*, 4, 24 (2014), 4701-35 [L.N. Hudson, T. Newbold, S. Contu *et al*]
- 'Nectar chemistry modulates the impact of an invasive plant on native pollinators', *Functional Ecology* (2015), <http://hdl.handle.net/2262/74965> [E.J. Tiedeken, P.A. Egan, P.C. Stevenson, G.A. Wright, M.J.F. Brown, E.F. Power, I. Farrell, S.M. Matthews and J.C. Stout]
- Saunders, Matthew**, 'Reviewing the carbon cycle dynamics and carbon sequestration potential of *Cyperus papyrus* L. wetlands in tropical Africa', *Wetlands Ecology and Management*, 22, 2 (2014), 143-155 [M.J. Saunders, F. Kansime and M.B. Jones]
- 'Impacts of exceptional and extreme inter-annual climatic events on the net ecosystem carbon dioxide exchange of a sitka spruce forest', *Agricultural and Forest Meteorology*, 184 (2014), 147-157 [M. Saunders, B. Tobin, C. Sweeney, M. Gioria, G. Benanti, E. Cacciotti and B.A. Osborne]
- 'Contrasting impacts of afforestation on nitrous oxide and methane emissions', *Agricultural and Forest Meteorology*, 198-199 (2014), 82-93 [G. Benanti, M. Saunders, B. Tobin and B. Osborne]
- Stout, Jane**, 'Yield-biodiversity trade-off in patchy fields of *Miscanthus x giganteus*', *Global Change Biology Bioenergy*, 7, 3 (2015), 455-467 [J. Dauber, S. Cass, D. Gabriel, K. Harte, S. Åström, E. O'Rourke and J.C. Stout]
- 'The PREDICTS database: a global database of how local terrestrial biodiversity responds to human impacts', *Ecology and evolution*, 4, 24 (2014), 4701-35 [L.N. Hudson, T. Newbold, S. Contu *et al*]
- 'Recognising the value of insects in providing ecosystem services', *Ecological Entomology*, 40 (2015), 1-2 [J.C. Stout and J.A. Finn]
- 'Nectar chemistry modulates the impact of an invasive plant on native pollinators', *Functional Ecology* (2015), <http://hdl.handle.net/2262/74965> [E.J. Tiedeken, P.A. Egan, P.C. Stevenson, G.A. Wright, M.J.F. Brown, E.F. Power, I. Farrell, S.M. Matthews and J.C. Stout]

Recent publications – Faculty of Engineering, Mathematics and Science

'Bumblebees are not deterred by ecologically relevant concentrations of nectar toxins', *The Journal of Experimental Biology*, 217, Pt 9 (2014), 1620-5 [E.J. Tiedeken, J.C. Stout, P.C. Stevenson and G.A. Wright]

Waldren, Stephen, 'The distribution of vascular plant species of conservation concern in Ireland, and their coincidence with designated areas', *Journal for Nature Conservation*, 24, C (2015), 56-62 [A. Walsh, J. Finn, M. Jebb, S. Waldren and C. Sullivan]

'Are Ireland's reintroduced *Pinus sylvestris* forests floristically analogous to their native counterparts in oceanic north-west Europe?', *Biology and Environment: Proceedings of the Royal Irish Academy*, 115B (2015), 97-114 [J.R. Roche, F.J.G. Mitchell, S. Waldren and J.E. Bjørndalen]

Williams, Michael, 'Interannual variation in nitrous oxide emissions from perennial ryegrass/white clover grassland used for dairy production', *Global Change Biology* (2014), <http://dx.doi.org/10.1111/gcb.12595> [W. Burchill, D. Li, G.J. Lanigan, M. Williams and J. Humphreys]

'Comparisons of biological nitrogen fixation in association with white clover (*Trifolium repens* L.) under four fertiliser nitrogen inputs as measured using two ¹⁵N techniques', *Plant and Soil* (2014), <http://dx.doi.org/10.1007/s11104-014-2199-1> [W. Burchill, E.K. James, D. Li, G. J. Lanigan, M. Williams, P.P.M. Iannetta and J. Humphreys]

'Interannual variation in nitrous oxide emissions from perennial ryegrass/white clover grassland used for dairy production', *Global Change Biology*, 20, 10 (2014), 3137-46 [W. Burchill, D. Li, G.J. Lanigan, M. Williams and J. Humphreys]

'A system N balance for a pasture-based system of dairy production under moist maritime climatic conditions', *Agriculture, Ecosystems and Environment*, 220 (2016), 202-210 [W. Burchill, G. Lanigan, M. Williams and J. Humphreys]

'The effect of renovation of long-term temperate grassland on N₂O emissions and N leaching from contrasting soils', *The Science of the Total Environment*, 560-561 (2016), 233-240 [D.J. Krol, M.B. Jones, M. Williams, K.G. Richards, F. Bourdin and G.J. Lanigan.]

Zimmermann, Jesko, 'Assessing the impact of within crop heterogeneity ('patchiness') in young *Miscanthus x giganteus* fields on economic feasibility and soil carbon sequestration', *Global Change Biology: Bioenergy*, 6, 5 (2014), 566-576 [J. Zimmermann, D. Styles, A. Hastings, J. Dauber and M.B. Jones]

GEOGRAPHY

Bourke, Mary, 'The dune effect on sand-transporting winds on Mars', *Nature Communications*, 6 (2015), <http://dx.doi.org/10.1038/ncomms9796> [D. Jackson, M. Bourke and T. Smyth]

Carmody, Pdraig, *Africa's information revolution: technical regimes and production networks in South Africa and Tanzania*, Wiley-Blackwell (2015), viii-249 [J.T. Murphy and P. Carmody]

'The world is bumpy: power, uneven development and the impact of new ICTs on South African manufacturing', *Human Geography*, 7, 1 (2014), 1-16 [P. Carmody]

'The diffusion and impacts of information and communication technology on tourism in the Western Cape, South Africa', *Urban Forum* (2014), 531-545 [M.A. Anwar, P. Carmody, B. Surborg and A. Corcoran]

'Globalisation, land grabbing and the present day colonial state in Uganda', *Journal of Environment and Development* (2016), 1-27 [P. Carmody and D. Taylor]

'Colonisation and the creation of insecurity regimes: Zimbabwe's land reform in regional context', *State, Land and Democracy in Southern Africa*, eds Corrado Tornimbeni and Arrighi Palloti, Ashgate (2015), 169-182 [P. Carmody]

Coxon, Peter, 'Interglacial deposits in Cork harbour', *The Quaternary of South East Ireland*, eds McGlynn, G. and Stefanini, B., London and Dublin, Quaternary Research Association and Irish Quaternary Association (2015), 147-157 [P. Coxon and L. Dowling]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Relict (fossil) pingos. Camaross, County Wexford', *The Quaternary of South East Ireland*, eds McGlynn, G. and Stefanini, B., London and Dublin, Quaternary Research Association and Irish Quaternary Association (2015), 100-105 [P. Coxon]
- Davies, Anna**, 'Waterwise: extending civic engagements for co-creating more sustainable washing futures', *ACME: An International E-Journal for Critical Geographies*, 14, 2 (2015), 390-400 [A.R. Davies and R. Doyle]
- Edwards, Robin**, 'Late quaternary evolution and sea-level history of a glaciated marine embayment, Bantry Bay, SW Ireland', *Marine Geology*, 369 (2015), 251-272 [R.M.K. Plets, S.L. Callard, J.A.G. Cooper, A.J. Long, R.J. Quinn, D.F. Belknap, R.J. Edwards, D.W.T. Jackson, J.T. Kelley, D. Long, G.A. Milne and X. Monteys]
- Hennessey, Mark**, 'Adapting a medieval urban landscape in nineteenth century Ireland', *Lords and Towns in Medieval Europe*, eds Anngret Simms and Howard B. Clarke, Farnham, Surrey, Ashgate (2015), 483-492 [M. Hennessey]
- McGlynn, Gayle**, 'Establishing the impacts of freshwater aquaculture in tropical Asia: the potential role of palaeolimnology', *Geo: Geography and Environment*, 2, 2 (2015), 148-163 [K. Legaspi, A. Lau, P. Jordan, A. Mackay, S. McGowan, G. McGlynn, S. Baldia, R.D. Papa and D. Taylor]
- 'Palaeoenvironmental change in the Comeragh and Monavullagh Mountains', *The Quaternary of South East Ireland*, eds McGlynn, G. and Stefanini, B., London and Dublin, Quaternary Research Association (2015), 117-129 [B. Stefanini and G. McGlynn]
- Murphy, Susan**, 'Unlocking the beauty of the imperfect duty to aid: Sen's idea of the duty of assistance', *Journal of Global Ethics*, 10, 3 (2014), 369-383 [S. Murphy]
- 'Glass ceilings and iron bars: women, gender, and poverty in the post-2015 development agenda', *Global Justice: Theory, Practice and Rhetoric*, 8 (2015), 74-96 [S. Murphy]

GEOLOGY

- Caulfield, John**, 'Corrigendum to 'Magma evolution in the primitive, intra-oceanic Tonga Arc: petrogenesis of basaltic andesites at Tofua volcano' and 'magma evolution in the primitive, intra-oceanic Tonga Arc: rapid petrogenesis of dacites at Fonualei volcano'', *Journal of Petrology*, 56, 3 (2015), 641-644 [J.T. Caulfield, J. Blichert-Toft, F. Albarede and S.P. Turner]
- ¹⁰Be, ¹⁸O and radiogenic isotopic constraints on the origin of adakititic signatures: a case study from Solander and Little Solander Islands, New Zealand', *Contributions to Mineralogy and Petrology*, 168, 3 (2014), 1-28 [F.V. Foley, S. Turner, T. Rushmer, J.T. Caulfield, N.R. Daczko, P. Bierman, M. Robertson, C.D. Barrie and A.J. Boyce]
- 'Integrating petrography, mineralogy and hydrochemistry to constrain the influence and distribution of groundwater contributions to baseflow in poorly productive aquifers: Insights from Gortinlieve catchment, Co. Donegal, NW Ireland', *Science of the Total Environment*, 500-501(2014), 224-234 [J. Caulfield, M.Chelliah, J.C. Comte, R. Cassidy and R. Flynn]
- Chew, David**, 'Chemical abrasion applied to LA-ICP-MS U-Pb zircon geochronology', *Minerals*, 4 (2014), 503-518 [Q.G. Crowley, K.Y. Keron, N. Riggs, B. Kamber, D. Chew, B. McConnell and K. Benn]
- 'Detrital zircon geochronology of the Carboniferous Baixo Alentejo Flysch Group (South Portugal); constraints on the provenance and geodynamic evolution of the South Portuguese Zone', *Journal of the Geological Society*, 172 (2015), 294-308 [B. Rodrigues, D. Chew, R. Jorge, P. Fernandes, C. Veiga-Pires and J. Oliveira]
- 'High-precision U-Pb zircon CA-ID-TIMS dates from western European late Viséan bentonites', *Journal of the Geological Society*, 171, 5 (2014), 649-658 [M. Pointon, D. Chew, M. Ovtcharova, G. Sevastopulo and B. Delcambre]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'High-resolution LA-ICP-MS trace element mapping of igneous minerals: in search of magma histories', *Chemical Geology*, 409 (2015), 157-168 [T. Ubide, C. McKenna, D. Chew and B. Kamber]
- 'Geochronology and thermochronology using apatite: Time and temperature, lower crust to surface', *Elements*, 11, 3 (2015), 189-194 [D.M. Chew and R.A. Spikings]
- 'The thermal history of the Karoo Moatize-Minjova Basin, Tete Province, Mozambique: an integrated vitrinite reflectance and apatite fission track thermochronology study', *Journal of African Earth Sciences*, 112 (2015), 55-72 [P. Fernandes, N. Cogné, D. Chew, B. Rodrigues, R. Jorge, J. Marques, D. Jamal and L. Vasconcelos]
- Clayton, Geoffrey*, 'Stable nitrogen isotope analysis of the Upper Devonian palynomorph, Tasmanites', *Palaeogeography, Palaeoclimatology, Palaeoecology*, 429 (2015), 13-21 [A. Rooney, R. Goodhue and G. Clayton]
- 'A new early carboniferous crustacean from the Forest of Dean, England', *Journal of Systematic Palaeontology*, 12 (2015), DOI:10.1080/14772019.2015.1096 [N.D.L. Clark, R. Gillespie, S.F. Morris and G. Clayton]
- Coxon, Catherine*, 'Developing status tests for selected Irish groundwater-dependent terrestrial ecosystem (GWDTE) types as part of groundwater body status assessment under the EU Water Framework Directive', *Biology and Environment: Proceedings of the Royal Irish Academy*, 115B, 2 (2015), 1-14 [S. Kimberley and C. Coxon]
- Crowley, Quentin*, 'No exploits back-arc basin in the Iapetus suture zone of Ireland', *Journal of the Geological Society*, 172 (2015), 740-747 [B. McConnell, M. Parks, Q.G. Crowley and A. Rushton]
- Dooley, Clodagh*, 'Fatigue failure of osteocyte cellular processes: implications for the repair of bone', *European Cells and Materials*, 27 (2014), 39-49 [C. Dooley, D. Cafferky, T.C. Lee and D. Taylor]
- Nicholas, Christopher*, 'Layering in the Paleocene/Eocene boundary of the Millville core is drilling disturbance', *Proceedings of National Academy of Sciences*, 111, 2 (2014), E1064-E1065 [P.N. Pearson and C.J. Nicholas]
- 'Geology and stratigraphy of the south-eastern Lake Edward basin (petroleum exploration area 4B), Albertine Rift Valley, Uganda', *Journal of Maps* (2015), <http://hdl.handle.net/2262/75227> [C.J. Nicholas]
- Rose, Catherine*, 'Rethinking the ancient sulfur cycle', *Annual Review of Earth and Planetary Sciences*, 43 (2015), 593-622 [D.A. Fike, A.S. Bradley and C.V. Rose]
- Sevastopulo, George*, 'The disparid family *Allagecrinidae* (Crinoidea): problems of systematics and phylogeny', *Cuadernos del Museo Geominero, Instituto Geológico y Minero de España, progress in Echinoderm palaeobiology*, eds S. Zamora and I. Ribáño, Zaragoza, Spain, Instituto Geológico y Minero de España, Madrid (2015), 151-154 [G.D. Sevastopulo]
- Ubide Garraalda, Teresa*, 'High-resolution LA-ICP-MS trace element mapping of igneous minerals: In search of magma histories', *Chemical Geology*, 409 (2015), 157-168 [T. Ubide, C. McKenna, D. Chew and B. Kamber]
- 'Geochronological constraints on the evolution of El Hierro (Canary Islands)', *Journal of African Earth Sciences*, 113 (2016), 88-94 [L. Becerril, T. Ubide, M. Sudo, J. Martí, I. Galindo, C. Galé, J. Morales, J. Yepes and M. Lago]
- Wyse Jackson, Patrick*, 'Feeding currents: a limiting factor for disparity of Palaeozoic fenestrate bryozoans', *Palaeogeography, Palaeoclimatology, Palaeoecology*, 433 (2015), 219-232 [J.L. Suárez Andrés and P.N. Wyse Jackson]
- 'Bryozoan fauna from the Mississippian (Visean) of Roque Redonde (Montagne Noire, southern France)', *Geodiversitas*, 37, 2 (2015), 151-213 [A. Ernst, P.N. Wyse Jackson and M. Aretz]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Clair Cameron Patterson (1922-1995)', 170-171, *The encyclopedia of mass spectrometry*, eds Michael L. Gross, Richard M. Caprioli, Keith A. Nier, Alfred L. Yergey, and P. Jane Gale, San Diego, Elsevier (2015)
- 'Irish 'rock stars': Doris Livesey Reynolds 1899-1985', *Earth Science Ireland*, 17 (2015), 11 [P.N. Wyse Jackson]
- 'Part G, revised, volume 2, chapter 8A: order fenestrata: morphology and growth', *Treatise Online*, 66 (2015), 1-91 [F.K. McKinney and P.N. Wyse Jackson]
- 'The alternative geologist: William King and his scientific debates', *Journal of the Galway Historical and Archaeological Society*, 66 (2015), 100-124 [M. DeArce and P.N. Wyse Jackson]
- Annals of bryozoology 5: aspects of the history of research on bryozoans*, eds P.N. Wyse Jackson and M.E. Spencer Jones, Dublin, International Bryozoology Association (2015), 1-138
- 'Biographical index to the bryozoologists', *Annals of Bryozoology 5: aspects of the history of research on bryozoans*, eds P.N. Wyse Jackson and M.E. Spencer Jones, Dublin, International Bryozoology Association (2015), 1-138 [J.L. d'Hondt, C. Bange, P.N. Wyse Jackson, M.E. Spencer Jones]
- 'Stratigraphic relevance and typification of the Mississippian fenestrate bryozoan *Narynella narynica* (Nikiforova, 1933)', *Paläontologische Zeitschrift*, 89 (2015), 645-651 [A. Ernst, Z. Tolokonnikova and P.N. Wyse Jackson]
- 'Kalksteen uit Ierland. Bouwen met Natuursteen', *GEA Magazine, Stichting Geologische Activiteiten*, 48, 4 (2015), 23-29 [P.N. Wyse Jackson]
- 'William Smith and Ireland: sources of Irish geological information on his geological map of 1820', *Earth Sciences History*, 35, 1 (2016), 115-123 [P.N. Wyse Jackson]

ZOOLOGY

- Buckley, Yvonne**, 'Fast-slow continuum and reproductive strategies structure plant life-history variation worldwide', *PNAS*, 113, 1 (2016), 230-235 [R. Salguero-Gómez, O.R. Jones, E. Jongejans, S.P. Blomberg, D.J. Hodgson, C. Mbeau-Ache, P.A. Zuidema, H. De Kroon and Y.M. Buckley]
- 'Breaking and remaking a seed and seed predator interaction in the introduced range of Scotch Broom (*Cytisus scoparius*) in New Zealand', *Journal of Ecology* (2015), 182-192 [Q. Paynter, Y.M. Buckley, P. Peterson, A. Hugh Gourlay and S.V. Fowler]
- 'The COMPADRE plant matrix database: an open online repository for plant demography', *Journal of Ecology*, 103, 1 (2015), 202-218 [R. Salguero-Gomez, O.R. Jones, R.C. Archer, Y.M. Buckley *et al*]
- 'Plant species' origin predicts dominance and response to nutrient enrichment and herbivores in global grasslands', *Nature Communications*, 6 (2015), <http://dx.doi.org/10.1038/ncomms8710> [E.W. Seabloom, E.T. Borer, Y.M. Buckley *et al*]
- 'Guidelines for using movement science to inform biodiversity policy', *Environmental Management*, 56, 4 (2015), 791-801 [P.S. Barton, P.E. Lentini, E. Alacs, S. Bau, Y.M. Buckley *et al*]
- 'Generalized linear models', *Ecological statistics: contemporary theory and application*, eds G.A. Fox, S. Negrete-Yankelevich, V.J. Sosa (2015), 131-148 [Y.M. Buckley]
- 'Distribution, demography and dispersal model of spatial spread of invasive plant populations with limited data', *Methods in Ecology and Evolution*, 6, 7 (2015), 782-794 [V.M. Adams, A.M. Petty, M.M. Douglas, Y.M. Buckley, K.B. Ferdinands, T.K. Okazaki, W. Dongwook and S.A. Setterfield]
- 'Patterns of introduced species interactions affect multiple aspects of network structure in plant-pollinator communities', *Ecology*, 95, 10 (2014), 2953-2963 [L. Russo, J. Memmott, D. Montoya, K. Shea and Y.M. Buckley]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Optimizing taxonomic resolution and sampling effort to design cost-effective ecological models for environmental assessment', *Journal of Applied Ecology*, 51, 6 (2014), 1722-1732 [J.R. Bennett, D.R. Sisson, J.P. Smol, B.F. Cumming, H.P. Possingham and Y.M. Buckley]
- 'An ecological paradox: more woodland predators and less artificial nest predation in landscapes colonized by noisy miners', *Austral Ecology*, 39, 3 (2014), 255-266 [O. Robertson, M. Maron, Y. Buckley, A. House and C. McAlpine]
- Coscieme, Luca**, 'Accounting for "land-grabbing" from a biocapacity viewpoint', *Science of the Total Environment*, 539 (2016), 551-559 [L. Coscieme, F.M. Pulselli, V. Niccolucci, N. Patrizi and P.C. Sutton]
- 'The world economy in a cube: a more rational structural representation of sustainability', *Global Environmental Change*, 35 (2015), 41-51 [F.M. Pulselli, L. Coscieme, L. Neri, A. Regoli, P.C. Sutton, A. Lemmi and S. Bastianoni]
- 'Cultural ecosystem services: the inspirational value of ecosystems in popular music', *Ecosystem Services*, 16 (2015), 121-124 [L. Coscieme]
- 'A thermodynamic geography: night-time satellite imagery as a proxy measure of emergy', *Ambio*, 43, 7 (2014), 969-979 [L. Coscieme, F.M. Pulselli, S. Bastianoni, C.D. Elvidge, S. Anderson and P.C. Sutton]
- 'Identification and evaluation of ecosystem services for a regional park: a case study in Italy', *WIT Transactions on Ecology and the Environment*, 191 (2014), 199-208 [T. Pedone, L. Coscieme, S. Ferrini and F.M. Pulselli]
- 'Emergy and ecosystem services: a national biogeographical assessment', *Ecosystem Services*, 7 (2014), 1552-159 [L. Coscieme, F.M. Pulselli, N. Marchettini, P.C. Sutton, S. Anderson, S. Sweeney]
- 'Using night-time satellite imagery to visualize emergy density in territorial systems', *WIT Transactions on Ecology and the Environment*, 191 (2014), 343-349 [L. Coscieme, S. Mancini, P.C. Sutton and N. Marchettini]
- Csergo, Ana**, 'Worldwide evidence of a unimodal relationship between productivity and plant species richness', *Science*, 349, 6245 (2015), 302-305 [L. Fraser, J. Pither, A. Jentsch *et al*]
- 'Positive relationship between genetic- and species diversity on limestone outcrops in the Carpathian Mountains', *Ecological Complexity*, 20 (2014), 233-239 [A. Csergo, L. Hufnagel and M. Höhn]
- Donohue, Ian**, 'Importance of long-term cycles for predicting water level dynamics in natural lakes', *PLOS ONE*, 10 (2015), e0119253 [J. García-Molinos, M. Viana, M. Brennan and I. Donohue]
- 'Nutrient enrichment alters the consequences of species loss', *Journal of Ecology*, 103 (2015), 862-870 [N.E. O'Connor, M.E.S. Bracken, T.P. Crowe and I. Donohue]
- 'Ecosystem-level effects of a globally-spreading invertebrate invader are not moderated by a functionally similar native', *Journal of Animal Ecology*, 84 (2015), 1628-1636 [M. Penk, K. Irvine and I. Donohue]
- 'Single gene locus changes perturb complex microbial communities as much as apex predator loss', *Nature Communications*, 6 (2015), 8235 [D. McClean, L. McNally, L.L. Salzberg, K.M. Devine, S.P. Brown and I. Donohue]
- 'Water level fluctuations regulate the structure and functioning of natural lakes', *Freshwater Biology*, 61 (2016), 251-254 [V.V. Evtimova and I. Donohue]
- 'Temporal variability of a single population can determine the vulnerability of communities to perturbations', *Journal of Ecology* (2016), <http://dx.doi.org/10.1111/1365-2745.12533> [R.J. Mrowicki, N.E. O'Connor and I. Donohue]
- 'Warming can enhance invasion success through asymmetries in energetic performance', *Journal of Animal Ecology* (2016), <http://dx.doi.org/10.1111/1365-2656.12480> [M.R. Penk, J.M. Jeschke, D. Minchin and I. Donohue]

Recent publications – Faculty of Engineering, Mathematics and Science

Holland, Celia, 'Cerebral toxocarasis: silent progression to neurogenerative disorders?', *Clinical Microbiology Reviews*, 28, 3 (2015), 663-686 [C.K. Fan, C.V. Holland, K. Loxton and U. Barghouth]

Jackson, Andrew, 'Are vulture restaurants needed to sustain the densest breeding population of the African white-backed vulture?', *Animal Conservation*, 12, 3 (2015), 279-286 [A. Kane, A.L. Jackson, A. Monadjem, M.A. Colomer and A. Margalida]

'Cold and CO₂ narcosis have long-lasting and dissimilar effects on *Bombus terrestris*', *Insectes Sociaux*, 62, 3 (2015), 291-298 [L.A. Poissonnier, A.L. Jackson and C.J. Tanner]

'The consequences of unidentifiable individuals for the analysis of an animal social network', *Animal Behaviour*, 104 (2015), 1-11 [M.J. Silk, D.P. Croft, A.L. Jackson and S. Bearhop]

Kelly, David, 'The avoidance of farmyards by European badgers *Meles meles* in a medium density population', *Applied Animal Behaviour Science*, 171 (2015), 170–176 [E.M. Mullen, T. MacWhite, P.K. Maher, D.J. Kelly, N.M. Marples and M. Good]

'Reproductive biology including evidence for superfetation in the European badger *Meles meles* (Carnivora: Mustelidae)', *PLOS ONE*, 10, 10 (2015), e0138093 [L.A.L. Corner, L.J. Stuart, D.J. Kelly and N.M. Marples]

'Quantifying difference in vocalizations of bird populations', *Interspeech*, (2015), 3417-3421 [C. O'Reilly, D. J. Kelly, N. M. Marples and N. Harte]

Marples, Nicola, 'Zoo playgrounds: a source of enrichment or stress for a group of nearby cockatoos? A case study', *Journal of Applied Animal Welfare Science*, 18 (2015), <http://dx.doi.org/10.1080/10888705.2015> [C.K. Keane and N.M. Marples]

'The avoidance of farmyards by European badgers *Meles meles* in a medium density population', *Applied Animal Behaviour Science*, 171 (2015), 170-176 [E.M. Mullen, T. MacWhite, P. K. Maher, D.J. Kelly, N.M. Marples and M. Good]

'Reproductive biology including evidence for superfetation in the European badger *Meles meles* (Carnivora: Mustelidae)', *PLOS ONE*, 10, 10 (2015), e0138093 [L.A.L. Corner, L.J. Stuart, D.J. Kelly and N.M. Marples]

'Quantifying difference in vocalizations of bird populations', *Interspeech*, (2015), 3417-3421 [C. O'Reilly, D. J. Kelly, N. M. Marples and N. Harte]

Regan, Eugenie, 'A framework to identify enabling and urgent actions for the 2020 Aichi Targets', *Basic and Applied Ecology*, 15, 8 (2014), 633 -638 [A. Marques, H.M. Pereira, C. Krug, (...), E.C. Regan, C. Rondinini, U.R. Sumaila, Louise S.L. Teh and M. Walpole]

Webster, Katherine, 'Building a multi-scaled geospatial temporal ecology database from disparate data sources: fostering open science and data reuse', *GigaScience*, 4, 1 (2015), 1-15 [P.A. Soranno, E. G. Bissell, (...), T. Wagner and K. E. Webster]

'Cross-scale interactions: quantifying multi-scaled cause-effect relationships in macrosystems', *Frontiers in Ecology and the Environment*, 12, 1 (2014), 65-73 [P.A. Soranno, K.S. Cheruvell, (...) and K.E. Webster]

'Regional variability among nonlinear chlorophyll-phosphorus relationships in lakes', *Limnol. Oceanogr.*, 59, 5 (2014), 1691-1703 [C.T. Filstrup, T. Wagner, P.A. Soranno, E.H. Stanley, C.A. Stow, K.E. Webster and J.A. Downing]

TRINITY CENTRE FOR THE ENVIRONMENT

Gray, Nicholas, *Facing up to global warming: what is going on and how you can make a difference?*, New York, Springer (2015), 1-406 [N.F. Gray]

Recent publications – Faculty of Engineering, Mathematics and Science

Kimberley, Sarah, 'Developing status tests for selected Irish groundwater-dependent terrestrial ecosystem (GWDTE) types as part of groundwater body status assessment under the EU Water Framework Directive', *Biology and Environment: Proceedings of the Royal Irish Academy*, 115B, 2 (2015), 1-14 [S.Kimberley and C. Coxon]

Rocha, Carlos, 'Effects of recirculation of seawater enriched in inorganic nitrogen on dissolved organic carbon processing in sandy seepage face sediments', *Marine Chemistry*, 166, (2014), 48-58 [J. Severino, P. Ibáñez and C. Rocha]

School of Physics

Blau, Werner, 'Broadband ultrafast nonlinear absorption and nonlinear refraction of layered molybdenum dichalcogenide semiconductors', *Nanoscale*, 6, 18 (2014), 10530-10535 [K. Wang, Y. Feng, C. Chang, J. Zhan, C. Wang, Q. Zhao, J.N. Coleman, L. Zhang, W.J. Blau and J. Wang] 'Effective wavelength scaling of and damping in plasmonic helical antennae', *ACS Photonics*, 2, 6 (2015), 675-679 [J.M. Caridad, D. McCloskey, F. Rossella, V. Bellani, J.F. Donegan and V. Krstij]

'Saturable absorption behavior of free-standing graphene polymer composite films over broad wavelength and time ranges', *Optics Express*, 23, 1 (2015), 559-569 [Y. Feng, N. Dong, G. Wang, Y. Li, S. Zhang, K. Wang, L. Zhang, W.J. Blau and J. Wang]

'Ultrafast nonlinear absorption and nonlinear refraction of 2D layered molybdenum dichalcogenide semiconductors', *Fundamental Science (CLEO_QELS)*, San Jose; United States (2015), 1-1551 [K. Wang, J. Wang, L. Zhang, J.N. Coleman and W.J. Blau]

Bloomfield, Shaun, 'The formation heights of coronal shocks from 2D density and Alfvén speed maps', *Astronomy and Astrophysics*, 564 (2014), A47 [P. Zucca, E.P. Carley, S.D. Bloomfield and P.T. Gallagher]

'CorPITA: an automated algorithm for the identification and analysis of coronal "EIT Waves"', *Solar Physics*, 289, 9 (2014), 3279-3295 [D.M. Long, D.S. Bloomfield, P.T. Gallagher and D. Pérez-Suárez]

Bradley, Louise, 'Tunable and long-range energy transfer efficiency through a graphene nanodisk', *Physical Review B - Condensed Matter and Materials Physics*, 93, 3 (2016), <http://hdl.handle.net/2262/75771> [V.D. Karanikolas, C.A. Marocico and A.L. Bradley]

'A theoretical investigation of the influence of gold nanosphere size on the decay and energy transfer rates and efficiencies of quantum emitters', *Journal of Chemical Physics*, 144, 2 (2016), <http://hdl.handle.net/2262/75772> [C.A. Marocico, X. Zhang and A.L. Bradley]

'Dynamical tuning of energy transfer efficiency on a graphene monolayer', *Physical Review B - Condensed Matter and Materials Physics*, 91, 12 (2015), <http://hdl.handle.net/2262/75769> [V.D. Karanikolas, C.A. Marocico and A.L. Bradley]

'Carrier density dependence of plasmon-enhanced nonradiative energy transfer in a hybrid quantum well-quantum dot structure', *Optics Express*, 23, 2 (2015), 1377-1387 [L.J. Higgins, V.D. Karanikolas, C.A. Marocico, A.P. Bell, T.C. Sadler, P.J. Parbrook and A.L. Bradley]

'Plasmon-enhanced nonradiative energy transfer in a hybrid quantum well structure', *17th International conference on transparent optical networks (ICTON)* (2014), 0.1109/ICTON.2015.7193600 [L.J. Higgins, V.D. Karanikolas, G.P. Murphy, X. Zhang, C.A. Marocico, P.J. Parbrook and A.L. Bradley]

'Chiral Ag nanostructure arrays as optical antennas', *9th International congress on advanced electromagnetic materials in microwaves and optics (METAMATERIALS)* (2015), <http://dx.doi.org/10.1109/MetaMaterials.2015.7342532> [J.J. Gough, D. McCloskey, J.M. Caridad, V. Krstij, M. Muller, N. Gaponik and A.L. Bradley]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Plasmon-enhanced energy transfer in a hybrid system using silver nanobox array geometries', *9th International congress on advanced electromagnetic materials in microwaves and optics (METAMATERIALS)* (2015), <http://dx.doi.org/10.1109/MetaMaterials.2015.7342538> [L.J. Higgins, V.D. Karanikolas, C.A. Marocico, P.J. Parbrook and A.L. Bradley]
- 'Tunable and efficient long range energy transfer via graphene plasmon modes', *9th International congress on advanced electromagnetic materials in microwaves and optics (METAMATERIALS)* (2015), <http://dx.doi.org/10.1109/MetaMaterials.2015.7342548> [V. Karanikolas, C.A. Marocico and A.L. Bradley]
- Coey, J.M.D.**, 'Replacement and original magnet engineering options (ROMEOS): a European seventh framework project to develop advanced permanent magnets without, or with reduced use of, critical raw materials', *JOM*, 67, 6 (2015), 1306-1317 [P. McGuinness, O. Akdogan, A. Asali, S. Bance, F.Bittner, J.M.D. Coey, (...) and S. Kobe]
- 'Enhanced energy product in Y-Co-Fe magnets intermediate between Nd-Fe-B and ferrite', *Applied Physics Letters*, 107, 3 (2015), <http://hdl.handle.net/2262/75218> [P. Tozman, M. Venkatesan, G.A. Zickler, J. Fidler and J.M.D. Coey]
- 'Design of compensated ferrimagnetic Heusler alloys for giant tunable exchange bias', *Nature Materials*, 14, 7 (2015), 679-684 [A.K. Nayak, (...), J.M.D. Coey and C. Felser]
- 'Effect of tetraalkylammonium cations on gas coalescence at a hydrogen-evolving microelectrode', *Langmuir*, 31, 21 (2015), 5737-5747 [L.M.A. Monzon, A.J. Gillen, M.E. Mobius and J.M.D. Coey]
- 'Synthesis, characterization and magnetic properties of ultrafine Co₃O₄ octahedra', *AIP Advances*, 5, 8 (2015), 087122- [Y.H. Chen, J.F. Zhou, D. Mullarkey, (...), J.M.D. Coey and H.Z. Zhang]
- Coleman, Jonathan**, 'Basal-plane functionalization of chemically exfoliated molybdenum disulfide by diazonium salts', *ACS Nano*, 9, 6 (2015), 6018-6030 [K.C. Knirsch, (...), J.N. Coleman and C. Backes]
- 'Preparation of gallium sulfide nanosheets by liquid exfoliation and their application as hydrogen evolution catalysts', *Chemistry of Materials*, 27, 9 (2015), 3483-3493 [A. Harvey, (...), V. Nicolosi and J.N. Coleman]
- 'Document inkjet printing of silver nanowire networks', *ACS Applied Materials and Interfaces*, 7, 17 (2015), 9254-9261 [D.J. Finn, M. Lotya and J.N. Coleman]
- 'Ultrafast nonlinear absorption and nonlinear refraction of 2D layered molybdenum dichalcogenide semiconductors', *Fundamental Science (CLEO_ QELS)*, San Jose; United States (2015), 1551 [K. Wang, J. Wang, L. Zhang, J.N. Coleman and W.J. Blau]
- 'Imaging and control of ferromagnetism in LaMnO₃/SrTiO₃ heterostructures', *Science*, 349, 6249 (2014), 716-719 [X.R. Wang, C.J. Li, W.M. Lü, T.R. Paudel, D.P. Leusink, M. Hoek, N. Poccia, A. Vailionis, T. Venkatesan, J.M.D. Coey, E.Y. Tsybmal and A.H. Hilgenkamp]
- 'Avoiding resistance limitations in high-performance transparent supercapacitor electrodes based on large-area, high-conductivity PEDOT:PSS films', *ACS Applied Materials and Interfaces*, 7, 30 (2015), 16495-16506 [T. Higgins and J. Coleman]
- Donegan, John**, 'Preparation of gallium sulfide nanosheets by liquid exfoliation and their application as hydrogen evolution catalysts', *Chemistry of Materials*, 27, 9 (2015), 3483-3493 [A. Harvey, C. Backes, (...), J.F. Donegan, G.S. Duesberg, V. Nicolosi and J.N. Coleman]
- 'Internal conical diffraction of a top-hat beam', *Fundamental Science (CLEO_ QELS)*, San Jose; United States (2015), 1551 [R.T. Darcy, J.G. Lunney and J.F. Donegan]
- 'Effective wavelength scaling of and damping in plasmonic helical antennae', *ACS Photonics*, 2, 6 (2015), 675-679 [J.M. Caridad, D. McCloskey, F. Rossella, V. Bellani, J.F. Donegan and V. Krstij]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Improved performance of tunable single mode laser array based on non uniformly spaced slots', *Fundamental Science (CLEO_QELS)*, San Jose; United States (2015), 1551- [A. Abdullaev, Q. Lu, W. Guo, (...), J. O'Callaghan and J.F. Donegan]
- 'Photonic nanojets in Fresnel zone scattering from non-spherical dielectric particles', *Optics Express*, 20 (2015), 26326 [D. McCloskey, K.E. Ballantine, P.R. Eastham and J.F. Donegan]
- 'There are many ways to spin a photon: half-quantization of a total optical angular momentum', *Science Advances*, 2, 4 (2016), e1501748 [K.E. Ballantine, J.F. Donegan and P.R. Eastham]
- Eastham, Paul**, 'Photonic nanojets in Fresnel zone scattering from non-spherical dielectric particles', *Optics Express*, 20 (2015), 26326- [D. McCloskey, K.E. Ballantine, P.R. Eastham and J.F. Donegan]
- 'There are many ways to spin a photon: half-quantization of a total optical angular momentum', *Science Advances*, 2, 4 (2016), e1501748 [K.E. Ballantine, J.F. Donegan and P.R. Eastham]
- Ferreira, Mauro**, 'Ultimate conductivity performance in metallic nanowire networks', *Nanoscale*, 7, 30 (2015), 13011-13016 [C. G. Rocha, C. O'Callaghan, C. Ritter, H. Manning, A. T. Bellew, J. J. Boland and M. S. Ferreira]
- 'Strain-modified RKKY interaction in carbon nanotubes', *Physical Review B*, 92 (2015), 035411 [P.D. Gorman, J.M. Duffy, S.R. Power and M.S. Ferreira]
- 'Spectroscopy of doubly charmed baryons from lattice QCD', *Physical Review D - Particles, Fields, Gravitation and Cosmology*, 91, 9 (2015), 094502- [M. Padmanath, R.G. Edwards, N. Mathur and M. Peardon]
- 'Sublattice segregation of hydrogen adsorbates in carbon nanotubes', *Physical Review B*, 92 (2015), 115405 [J.A. Lawlor and M.S. Ferreira]
- 'Sublattice asymmetry of impurity doping in graphene: a review', *Beilstein Journal of Nanotechnology*, 5 (2014), 1210-7 [J.A. Lawlor and M.S. Ferreira]
- 'Resistance of single Ag nanowire junctions and their role in the conductivity of nanowire networks', *ACS NANO*, 9, 11 (2015), 11422-11429 [A.T. Bellew, H.G. Manning, C. Gomes da Rocha, M.S. Ferreira and J.J. Boland]
- 'The influence of Gaussian strain on sublattice selectivity of adsorbates in graphene', *Journal of Physics: Condensed Matter*, 28 (2016), 235001 [J.A. Lawlor, C.G. Rocha, V. Torres, A. Latge and M.S. Ferreira]
- Finch, Eric**, 'Inter-comparison of radon detectors for one to four week measurement periods', *Journal of Radiological Protection*, 36, 1 (2016), 104-116 [G.A. Gunning, M. Murray, S.C. Long, M.J. Foley and E.C. Finch]
- Fleischer, Karsten**, 'Spray pyrolysis growth of a high figure of merit, nano-crystalline, p-type transparent conducting material at low temperature', *Applied Physics Letters*, 107 (2015), 031901 [L. Farrell, E. Norton, B.J. O'Dowd, D. Caffrey, I. V. Shvets and K. Fleischer]
- 'Raman spectra of p-type transparent semiconducting Cr₂O₃:Mg', *Thin Solid Films*, 594 (2015), 245-249 [K. Fleischer, D. Caffrey, L. Farrell, E. Norton, D. Mullarkey, E. Arca and I.V. Shvets]
- 'Optical characterisation of plasmonic nanostructures on planar substrates using second-harmonic generation', *Optics Express*, 23, 20 (2015), 26486-26498 [L. Persechini, R. Verre, C.M. Smith, K. Fleischer, I.V. Shvets, M. Ranjan, S. Facsko and J.F. McGilp]
- 'Synthesis of nanocrystalline Cu deficient CuCrO₂ - a high figure of merit p-type transparent semiconductor', *Journal of Materials Chemistry C*, 4 (2016), 126-134 [L. Farrell]
- 'Formation of plasmonic nanoparticle arrays - rules and recipes for an ordered growth', *Physica Status Solidi (B) Basic Research*, 253, 2 (2016), 198-205 [K. Fleischer, O. Ualibek, R. Verre and I.V. Shvets]
- 'X-ray spectroscopic studies of the electronic structure of chromium-based p-type transparent conducting oxides', *Physical Review B*, 93 (2016), 115302 [E. Norton, L. Farrell, S. D. Callaghan, C. McGuinness, I. V. Shvets and K. Fleischer]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Polarization conversion-based molecular sensing using anisotropic plasmonic metasurfaces', *Nanoscale*, 8 (2016), 10576 [R. Verre, N. Maccaferri, K. Fleischer, M. Svedendahl, N. Odebo Länk, A. Dmitriev, P. Vavassori, I. V. Shvets and M. Käll]
- Gunning, Gillian, 'Inter-comparison of radon detectors for one to four week measurement periods', *Journal of Radiological Protection*, 36, 1 (2016), 104-116 [G.A. Gunning, M. Murray, S.C. Long, M.J. Foley and E.C. Finch]
- Guo, Wei-Hua, 'Improved performance of tunable single mode laser array based on non uniformly spaced slots', *Fundamental Science (CLEO_QELS)*, San Jose; United States (2015), 1551- [A. Abdullaev, Q. Lu, W. Guo, (...), J. O'Callaghan and J.F. Donegan]
- Harper, Graham, 'ALMA observations of anisotropic dust mass loss in the inner circumstellar environment of the red supergiant VY Canis Majoris', *Astronomy and Astrophysics*, 573 (2015), <http://dx.doi.org/10.1051/0004-6361/201425101> [E. O'gorman, W. Vlemmings, A.M.S. Richards, A. Baudry, E. De Beck, L. Decin, G.M. Harper, E.M. Humphreys, P. Kervella, T. Khouri and S. Muller]
- 'ALMA sub-mm maser and dust distribution of VY Canis Majoris', *Astronomy and Astrophysics*, 572 (2014), L9 [A.M.S. Richards, C.M.V. Impellizzeri, E.M. Humphreys, C. Vlahakis, W. Vlemmings, A. Baudry, E. De Beck, L. Decin, S. Etoka, M.D. Gray, G.M. Harper, *et al*]
- 'SOFIA/EXES observations of water absorption in the protostar AFGL 2591 at high spectral resolution', *Astrophysical Journal Letters*, 802, 2 (2015), <http://dx.doi.org/10.1088/2041-8205/802/2/L14> [N. Indriolo, D.A. Neufeld, C.N. DeWitt, M.J. Richter, A.C.A. Boogert, G.M. Harper, D.T. Jaffe, K.R. Kulas, M.E. McKelvey, N. Ryde and W. Vacca]
- Hegner, Martin, 'An optimized measurement chamber for cantilever array measurements in liquid incorporating an automated sample handling system', *EPJ Techniques and Instrumentation*, 2, 7 (2015), <http://hdl.handle.net/2262/75679> [M. Walther, P.M. Fleming, F. Padovani and M. Hegner]
- Hutzler, Stefan, 'Slow crystallisation of a monodisperse foam stabilised against coarsening', *Soft Matter*, 11 (2015), 4710-4716 [A.J. Meagher, D. Whyte, J. Banhart, S. Hutzler and F. Garcia-Moreno]
- 'Foams', *Princeton companion to applied mathematics*, ed. N.J. Higham, Princeton, Princeton University Press (2015), 737-740 [D. Weaire and S. Hutzler]
- 'The relative energy of fcc and hcp foams', *Philosophical Magazine Letters*, 95 (2015), 319-323 [D. Whyte, D. Weaire, W. Drenckhan and S. Hutzler]
- 'Structure and energy of liquid foams', *Advances in Colloid and Interface Science*, 224 (2015), 1-16 [W. Drenckhan and S.Hutzler]
- 'Adaptation of the Z-cone model to the estimation of the energy of a bcc foam', *Philosophical Magazine*, 95 (2015), 4023-4034 [R. Murtagh, D. Whyte, D. Weaire and S. Hutzler]
- 'On the relationship between income, fertility rates and the state of democracy in society', *Physica A*, 452 (2016), 9-18 [S. Hutzler, C. Sommer and P. Richmond]
- Krstic, Vojislav, 'Effective wavelength scaling of and damping in plasmonic helical antennae', *ACS Photonics*, 2, 6 (2015), 675-679 [J.M. Caridad, D. McCloskey, F. Rossella, V. Bellani, J.F. Donegan and V. Krstij]
- 'In operandi observation of dynamic annealing: a case study of boron in germanium nanowire devices', *Applied Physics Letters*, 106, 23 (2015), 2331109 [M.M. Koles-nik-Gray, C. Sorger, S. Biswas, J.D. Holmes, H.B. Weber and V. Krstij]
- 'Variation of self-seeded germanium nanowire electronic device functionality due to synthesis condition determined surface states', *Advanced Materials Interfaces*, 2, 5 (2015), <http://dx.doi.org/10.1002/admi.201400469> [S. Connaughton, R. Hobbs, O. Lotty, J.D. Holmes and V. Krstij]

Recent publications – Faculty of Engineering, Mathematics and Science

- Lunney, James**, 'Internal conical diffraction of a top-hat beam', *Fundamental Science (CLEO_QELS)*, San Jose; United States (2015), 1551 [R.T. Darcy, J.G. Lunney and J.F. Donegan]
- McCabe, Eithne**, 'The environment for women in physics in Ireland', *5th IUPAP international conference on women in physics*, Canada, AIP (2015), <http://dx.doi.org/10.1063/1.4> [E. McLoughlin, S. Fee and E. McCabe]
- McGilp, John**, 'Reflectance anisotropy spectroscopy of clean and Sb covered Ge(001) surfaces and comparison with clean Si(001) surfaces', *Physica Status Solidi (B) Basic Research*, 252, 1 (2015), 78-86 [S. Banerjee, J.F. McGilp and C.H. Patterson,]
'Probing chiral monolayers of cysteine on Au(110) using reflection anisotropy spectroscopy and second-harmonic generation', *Physica Status Solidi B*, 252, 1 (2015), 95-99 [L. Persechini and J.F. McGilp]
'Optical characterisation of plasmonic nanostructures on planar substrates using second-harmonic generation', *OPTICS EXPRESS*, 23, 20 (2015), 26486-26498 [L. Persechini, R. Verre, C.M. Smith, K. Fleischer, I.V. Shvets, M. Ranjan, S. Facsko and J.F. McGilp]
- McGuinness, Cormac**, 'X-ray spectroscopic studies of the electronic structure of chromium-based p-type transparent conducting oxides', *Physical Review B*, 93 (2016), 115302- [E. Norton, L. Farrell, S.D. Callaghan, C. McGuinness, I.V. Shvets and K. Fleischer]
- Moebius, Matthias**, 'Yielding and flow of highly concentrated, few-layer graphene suspensions', *Soft Matter*, 11, 16 (2015), 3159-3164 [S. Barwich, J.N. Coleman and M.E. Möbius]
'Effect of tetraalkylammonium cations on gas coalescence at a hydrogen-evolving microelectrode', *Langmuir*, 31, 21 (2015), 5737-5747 [L.M.A. Monzon, A.J. Gillen, M.E. Mobius and J.M.D. Coey]
'Self-assembly formation of a healable lanthanide luminescent supramolecular metallogel from 2,6-bis(1,2,3-triazol-4-yl)pyridine (btp) ligands', *Chemical Communications*, 51, 74 (2015), 14123-14126 [E.P. McCarney, J.P. Byrne, B. Twamley, M. Martínez-Calvo, G. Ryan, M.E. Möbius and T. Gunnlaugsson]
- Motta, Carlo**, 'Charge transport properties of durene crystals from first-principles', *Journal of Chemical Theory and Computation*, 10 (2014), 4624- [C. Motta and S. Sanvito]
'Revealing the role of organic cations in hybrid halide perovskite $\text{CH}_3\text{NH}_3\text{PbI}_3$ ', *Nature Communications*, 6 (2015), 7026- [C. Motta, F. El-Mellouhi, S. Kais, N. Tabet, F. Alharbi and S. Sanvito]
'Charge carrier mobility in hybrid halide perovskites', *Scientific Reports*, 5 (2015), 12746 [C. Motta, F. El-Mellouhi and S. Sanvito]
'Resonant lifetime of core-excited organic adsorbates from first principles', *Journal of Physical Chemistry C*, 118, 17 (2014), 8775-8782 [G. Fratesi, C. Motta, M.I. Trioni, G.P. Brivio and D. Sánchez-Portal]
'Highly stable Au atomic contacts covered with benzenedithiol under ambient conditions', *Physical Chemistry Chemical Physics*, 16, 29 (2014), 15662-15666 [D. Murai, T. Nakazumi, S. Fujii, Y. Komoto, K. Tsukagoshi, C. Motta and M. Kiguchi]
- Murphy, Barry**, 'Homolytic cleavage of molecular oxygen by manganese porphyrins supported on Ag(111)', *ACS Nano*, 8, 5 (2014), 5190-5198 [B.E. Murphy, S.A. Krasnikov, N.N. Sergeeva, A.A. Cafolia, A.B. Preobrajenski, A.N. Chaika, O. Lübben and I.V. Shvets,]
'Transport gap opening and high on-off current ratio in trilayer graphene with self-aligned nanodomain boundaries', *ACS Nano*, 9, 9 (2015), 8967-8975 [H.C. Wu, (...), B.E. Murphy *et al*]
- O'Dowd, Brendan**, 'Spray pyrolysis growth of a high figure of merit, nano-crystalline, p-type transparent conducting material at low temperature', *Applied Physics Letters*, 107 (2015), 031901- [L. Farrell, E. Norton, B.J. O'Dowd, D. Caffrey, I.V. Shvets and K. Fleischer]

Recent publications – Faculty of Engineering, Mathematics and Science

- Patterson, Charles**, 'Atomic and electronic structures of Si(111)-($\sqrt{3}\times\sqrt{3}$)R30-Au and (6x6)-Au surfaces', *Journal of Physics Condensed Matter*, 27 (2015), 475001 [C. H. Patterson]
- Sanvito, Stefano**, 'First-principles investigation on the electronic efficiency and binding energy of the contacts formed by graphene and poly-aromatic hydrocarbon anchoring groups', *Journal of Chemical Physics*, 142, 16 (2015), 164701- [Y. Li, X. Tu, H. Wang, S. Sanvito and S. Hou]
- 'Replacement and original magnet engineering options (ROMEOS): a European seventh framework project to develop advanced permanent magnets without, or with reduced use of, critical raw materials', *JOM*, 67, 6 (2015), 1306-1317 [P. McGuinness, (...), D. Le Roy, S. Sanvito, et al]
- 'Single-atom based coherent quantum interference device structure', *Nano Letters*, 15, 5 (2015), 2881-2886 [B. Naydenov, I. Rungger, M. Mantega, S. Sanvito and J.J. Boland]
- 'Revealing the role of organic cations in hybrid halide perovskite $\text{CH}_3\text{NH}_3\text{PbI}_3$ ', *Nature Communications*, 6 (2015), 7026- [C. Motta, F. El-Mellouhi, S. Kais, N. Tabet, F. Alharbi and S. Sanvito]
- 'Mechanism of H_2O -induced conductance changes in AuCl_4 -functionalized CNTs', *Journal of Physical Chemistry C*, 119, 17 (2015), 9568-9573 [A. Murat, I. Rungger, S. Sanvito and U. Schwingenschlög]
- 'Single atom anisotropic magnetoresistance on a topological insulator surface', *New Journal of Physics*, 17 (2015), 033021 [A. Narayan, I. Rungger and S. Sanvito]
- 'Basal-plane functionalization of chemically exfoliated molybdenum disulfide by diazonium salts', *ACS Nano*, 9, 6 (2015), 6018-6030 [K.C. Knirsch, (...), S. Sanvito, G.S. Duesberg, V. Nicolosi, F. Hauke, A. Hirsch, J.N. Coleman and C. Backes]
- 'Electronic properties and chemical reactivity of TiS_2 nanoflakes', *Journal of Physical Chemistry C*, 119, 27 (2015), 15707-15715 [C.S. Cucinotta, K. Dolui, H. Pettersson, Q.M. Ramasse, E. Long, S.E. O'Brian, V. Nicolosi and S. Sanvito]
- 'Vibron-assisted spin relaxation at a metal/organic interface', *Physical Review B - Condensed Matter and Materials Physics*, 91, 22 (2015), <http://hdl.handle.net/2262/75258> [A. Droghetti, I. Rungger, M. Cinchetti and S. Sanvito]
- 'Spin-valve effect in $\text{NiFe}/\text{MoS}_2/\text{NiFe}$ Junctions', *Nano Letters*, 15, 8 (2015), 5261-5267 [W. Wang, A. Narayan, L. Tang, K. Dolui, Y. Liu, X. Yuan, Y. Jin, Y. Wu, I. Rungger, S. Sanvito and F. Xiu]
- 'Charge carrier mobility in hybrid halide perovskites', *Scientific Reports*, 5 (2015), 12746 [C. Motta, F. El-Mellouhi and S. Sanvito]
- 'The image charge effect and vibron-assisted processes in Coulomb blockade transport: a first principles approach', *Nanoscale*, 7, 45 (2015), 19231-19240 [A.M Souza, I. Rungger, U. Schwingenschlög] and S. Sanvito]
- 'Controlling the spin texture of topological insulators by rational design of organic molecules', *Nano Letters*, 15, 9 (2015), 6022-6029 [S. Jakobs, A. Narayan, B. Stadtmüller, (...), S. Sanvito and M. Cinchetti]
- 'Liquid exfoliation of solvent-stabilized few-layer black phosphorus for applications beyond electronics', *Nature Communications*, 6 (2015), <http://dx.doi.org/10.1038/ncomms9563> [D. Hanlon, (...), S. Sanvito, D.D. O'Regan, G.S. Duesberg, V. Nicolosi and J.N. Coleman]
- 'Electronic transport as a driver for self-interaction-corrected methods', *Advances in Atomic, Molecular, and Optical Physics*, eds Ennio Arimondo, Chun C. Lin and Susanne F. Yelin, Waltham, MA, Elsevier (2015), 29-86 [A.M. Pertsova, C. Canali, M.R. Pederson, I. Rungger and S. Sanvito]
- Shvets, Igor**, 'Spray pyrolysis growth of a high figure of merit, nano-crystalline, p-type transparent conducting material at low temperature', *Applied Physics Letters*, 107 (2015), 031901 [L. Farrell, E. Norton, B.J. O'Dowd, D. Caffrey, I. V. Shvets and K. Fleischer]

Recent publications – Faculty of Engineering, Mathematics and Science

- 'Enhanced Shubnikov-De Haas oscillation in nitrogen-doped graphene', *ACS Nano*, 9, 7 (2015), 7207-7214 [H.C. Wu, M. Abid, Y.C. Wu, C. Ó Coileáin, A. Syrylybekov, J.F. Han, C.L. Heng, H. Liu, M. Abid and I. Shvets]
- 'Rotation dynamics of C60 molecules in a monolayer fullerene film on the $WO_2/W_{(110)}$ surface near the rotational phase transition', *Journal of Experimental and Theoretical Physics*, 120, 5 (2015), 831-837 [S.I. Bozhko, E.A. Levchenko, V.N. Semenov, M.F. Bulatov and I.V. Shvets]
- 'Raman spectra of p-type transparent semiconducting $Cr_2O_3:Mg$ ', *Thin Solid Films*, 594 (2015), 245-249 [K. Fleischer, D. Caffrey, L. Farrell, E. Norton, D. Mullarkey, E. Arca and I.V. Shvets]
- 'Synthesis of nanocrystalline Cu deficient $CuCrO_2$ - a high figure of merit p-type transparent semiconductor', *Journal of Materials Chemistry C*, 4 (2016), 126-134 [L. Farrell]
- 'Formation of plasmonic nanoparticle arrays - rules and recipes for an ordered growth', *Physica Status Solidi (B) Basic Research*, 253, 2 (2016), 198-205 [K. Fleischer, O. Ualibek, R. Verre and I.V. Shvets]
- 'X-ray spectroscopic studies of the electronic structure of chromium-based p-type transparent conducting oxides', *Physical Review B*, 93 (2016), 115302 [E. Norton, L. Farrell, S.D. Callaghan, C. McGuinness, I.V. Shvets and K. Fleischer]
- 'Transport gap opening and high on-off current ratio in trilayer graphene with self-aligned nanodomain boundaries', *ACS Nano*, 9, 9 (2015), 8967-8975 [H.C. Wu, A.N. Chaika, T.W. Huang, (...) and I. Shvets]
- 'Polarization conversion-based molecular sensing using anisotropic plasmonic metasurfaces', *Nanoscale*, 8 (2016), 10576- [R. Verre, N. Maccaferri, K. Fleischer, M. Svedendahl, N. Odebo Länk, A. Dmitriev, P. Vavassori, I. V. Shvets and M. Käll]
- 'Band alignment at the interface between Ni-doped Cr_2O_3 and Al-doped ZnO: implications for transparent p-n junctions', *Journal of Physics: Condensed Matter*, 28, 224004 (2016), <http://dx.doi.org/10.1088/0953-8984/28/22/224004> [E. Arca, M.A. McInerney and I.V. Shvets]
- Smith, Christopher**, 'Synthesis of nanocrystalline Cu deficient $CuCrO_2$ - a high figure of merit p-type transparent semiconductor', *Journal of Materials Chemistry C*, 4 (2016), 126-134 [L. Farrell]
- Venkatesan, Munuswamy**, 'Replacement and original magnet engineering options (ROMEOS): a European seventh framework project to develop advanced permanent magnets without, or with reduced use of, critical raw materials', *JOM*, 67, 6 (2015), 1306-1317 [P. McGuinness, (...), M. Venkatesan, T.G. Woodcock and S. Kobe]
- 'Hierarchical elasticity of bimesogenic liquid crystals with twist-bend nematic phase', *Applied Physics Letters*, 106, 17 (2015), <http://hdl.handle.net/2262/75212> [C.J. Yun, M.R. Vengatesan, J.K. Vij and J.K. Song]
- 'Enhanced energy product in Y-Co-Fe magnets intermediate between Nd-Fe-B and ferrite', *Applied Physics Letters*, 107, 3 (2015), <http://hdl.handle.net/2262/75218> [P. Tozman, M. Venkatesan, G.A. Zickler, J. Fidler and J.M.D. Coey]
- 'Synthesis, characterization and magnetic properties of ultrafine Co_3O_4 octahedra', *AIP Advances*, 5, 8 (2015), 087122 [Y.H. Chen, J.F. Zhou, D. Mullarkey, (...), M. Coey and H.Z. Zhang]
- Weaire, Denis**, 'Slow crystallisation of a monodisperse foam stabilised against coarsening', *Soft Matter*, 11 (2015), 4710-4716 [A.J. Meagher, D. Whyte, J. Banhart, S. Hutzler and F. García-Moreno]
- 'Foams', *Princeton companion to applied mathematics*, ed. N.J. Higham, Princeton, Princeton University Press (2015), 737-740 [D. Weaire and S. Hutzler]
- 'The relative energy of fcc and hcp foams', *Philosophical Magazine Letters*, 95 (2015), 319-323 [D. Whyte, D. Weaire, W. Drenckhan and S. Hutzler]
- 'Structure and energy of liquid foams', *Advances in Colloid and Interface Science*, 224 (2015), 1-16 [W. Drenckhan and S. Hutzler]

Recent publications – Faculty of Engineering, Mathematics and Science

'Adaptation of the Z-cone model to the estimation of the energy of a bcc foam', *Philosophical Magazine*, 95 (2015), 4023-4034 [R. Murtagh, D. Whyte, D. Weaire and S. Hutzler]

Zhang, Hongzhou, 'High throughput secondary electron imaging of organic residues on a graphene surface', *Scientific reports*, 4 (2014), 7032 [Y. Zhou, R. O'Connell, P. Maguire and H. Zhang]

'Nanopatterning and electrical tuning of MoS₂ layers with a subnanometer helium ion beam', *Nano Letters* (2015), <http://dx.doi.org/10.1021/acs.nanolett.5b01673> [D.S. Fox, Y. Zhou, P. Maguire, (...) and H. Zhang]

'Synthesis, characterization and magnetic properties of ultrafine Co₃O₄ octahedra', *AIP Advances*, 5, 8 (2015), 087122 [Y.H. Chen, J.F. Zhou, D. Mullarkey, (...), M. Coey and H.Z. Zhang]

'Understanding structure-function relationship in hybrid Co₃O₄-Fe₂O₃/C lithium-ion battery electrodes', *ACS Applied Materials and Interfaces*, 7, 37 (2015), 20736-20744 [I. Sultana, M.M. Rahman, T. Ramireddy, N. Sharma, D. Poddar, A. Khalid, H. Zhang, Y. Chen and A.M. Glushenkov]

'Tunable nonlinear refractive index of two-dimensional MoS₂, WS₂, and MoSe₂ nanosheet dispersions', *Photonics Research*, 3, 2 (2015), A51-A55 [G. Wang, S. Zhang, X. Zhang, L. Zhang, Y. Cheng, D. Fox, H. Zhang, J.N. Coleman, W.J. Blau and J. Wang]

'Induced morphological changes on vicinal MgO (100) subjected to high-temperature annealing: Step formation and surface stability', *Surface and Interface Analysis*, 47, 10 (2015), 969-977 [A. Syrlybekov, E. Arca, R. Verre, C. O Coileain, O. Toktarbaiuly, A. Khalid, H. Zhang and I.V. Shvets]

'Transport gap opening and high on-off current ratio in trilayer graphene with self-aligned nanodomain boundaries', *ACS Nano*, 9, 9 (2015), 8967-8975 [H.C. Wu, A.N. Chaika, (...), H. Zhang, M. Abid, Y.T. Janabi, S.N. Molotkov, C.-R. Chang and I. Shvets]

'Sensitivity enhancement for a multimode fiber sensor with an axisymmetric metal grating layer', *Photonics and Nanostructures - Fundamentals and Applications*, 12, 1 (2014), 69-74 [Y. Ma, G. Farrell, Y. Semenova, H.P. Chan, H. Zhang and Q. Wu]

'Electrical-field-driven metal-insulator transition tuned with self-aligned atomic defects', *Nanoscale*, 7, 33 (2015), 14055-14061 [A. Syrlybekov, H.C. Wu, (...), L. Yang, H.Z. Zhang, I.V. Shvets]

'Evolution of the electrochemical capacitance of transition metal oxynitrides with time: the effect of ageing and passivation', *Journal of Materials Chemistry A*, 2, 32 (2014), 12940-12951 [O. Kartachova, Y. Chen, R. Jones, Y. Chen, H. Zhang and A.M. Glushenkov]

Zhou, Yangbo, 'High throughput secondary electron imaging of organic residues on a graphene surface', *Scientific reports*, 4 (2014), 7032 [Y. Zhou, R. O'Connell, P. Maguire and H. Zhang]

Research students

Caffrey, David, 'Spray pyrolysis growth of a high figure of merit, nano-crystalline, p-type transparent conducting material at low temperature', *Applied Physics Letters*, 107 (2015), 031901- [L. Farrell, E. Norton, B.J. O'Dowd, D. Caffrey, I.V. Shvets and K. Fleischer]

'Raman spectra of p-type transparent semiconducting Cr₂O₃:Mg', *Thin Solid Films*, 594 (2015), 245-249 [K. Fleischer, D. Caffrey, L. Farrell, E. Norton, D. Mullarkey, E. Arca and I.V. Shvets]

'Synthesis of nanocrystalline Cu deficient CuCrO₂ - a high figure of merit p-type transparent semiconductor', *Journal of Materials Chemistry C*, 4 (2016), 126-134 [L. Farrell]

Mullarkey, Daragh, 'Raman spectra of p-type transparent semiconducting Cr₂O₃:Mg', *Thin Solid Films*, 594 (2015), 245-249 [K. Fleischer, D. Caffrey, L. Farrell, E. Norton, D. Mullarkey, E. Arca and I.V. Shvets]

Recent publications – Faculty of Engineering, Mathematics and Science

- Norton, Emma, 'Spray pyrolysis growth of a high figure of merit, nano-crystalline, p-type transparent conducting material at low temperature', *Applied Physics Letters*, 107 (2015), 031901- [L. Farrell, E. Norton, B.J. O'Dowd, D. Caffrey, I. V. Shvets and K. Fleischer]
- 'Raman spectra of p-type transparent semiconducting $\text{Cr}_2\text{O}_3:\text{Mg}$ ', *Thin Solid Films*, 594 (2015), 245-249 [K. Fleischer, D. Caffrey, L. Farrell, E. Norton, D. Mullarkey, E. Arca and I.V. Shvets]
- 'Synthesis of nanocrystalline Cu deficient CuCrO_2 - a high figure of merit p-type transparent semiconductor', *Journal of Materials Chemistry C*, 4 (2016), 126-134 [L. Farrell]