

# Recent Publications – Faculty of Science, Technology, Engineering and Mathematics

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

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## School of Biochemistry and Immunology

### BIOCHEMISTRY

**Creagh, Emma**, 'Identification of TLR2 signalling mechanisms which contribute to Barrett's and oesophageal adenocarcinoma disease progression', *Cancers (Basel)*, 13, 9 (2021), 2065-2081 [E. Flis, G. Barber, C. Nulty (...), M. Quante, E.M. Creagh]

**Cunningham, Colm**, 'The effect of baseline cognition and delirium on long-term cognitive impairment and mortality: a prospective population-based study', *The Lancet Healthy Longevity*, 3, 4 (2022), e232-e241 [A. Tsui, S.D. Searle, H. Bowden (...), A. MacLulich, D. Davis]

'Microglia states and nomenclature: a field at its crossroads', *Neuron*, 110, 21 (2022), 3458-3483 [R.C. Paolicelli, A. Sierra, B. Stevens, M-E. Tremblay, L.J. Wu, T. Wyss-Coray]

**Davey, Gavin**, 'In silico analysis of the human milk oligosaccharide glycome reveals key enzymes of their biosynthesis', *Scientific Reports*, 27, 12 (1) (2022), 10846 [A.G. McDonald, J. Mariethoz, G.P. Davey, F. Lisacek]

**Finlay, David**, 'Dendritic cells metabolism: a strategic path to improve antitumoral DC vaccination', *Clinical and Experimental Immunology*, 208, 2 (2022), 1993-2001 [E. Currivan, D.K. Finlay, D. Moreira]

'The circadian clock influences T cell responses to vaccination by regulating dendritic cell antigen processing', *Nature Communications*, 13, 1 (2022), 7217 [M.P. Cervantes-Silva, R.G. Carroll, M.M. Wilk (...), D.K. Finlay *et al.*]

'De novo polyamine synthesis supports metabolic and functional responses in activated murine NK cells', *European Journal of Immunology*, 51, 1 (2021), 91-102 [K.L. O'Brien, N. Assmann, E. O'Connor (...), K. Dettmer, D.K. Finlay]

**Kelly, Vincent**, 'Design and synthesis of multifunctional microtubule targeting agents endowed with dual pro-apoptotic and anti-autophagic efficacy', *European Journal of Medicinal Chemistry*, 235 (2022), 114274 [G. Campiani, T. Khan, C. Ulivieri (...), V.P. Kelly *et al.*]

'Knockout of ABCB1 in NCI-H441 cells reveals CF to be a suboptimal substrate to study MRP1 activity in organotypic in vitro models', *European Journal of Pharmaceutical Sciences: Official Journal of the European Federation for Pharmaceutical Sciences*, 181 (2023), 106364 [J.A. Sake, M.A. Selo, L. Burtnyak (...), V.P. Kelly, C. Ehrhardt]

'Structural basis of Qng1-mediated salvage of the micronutrient queuine from queuosine-5'-monophosphate as the biological substrate', *Nucleic Acids Research*, 51, 2 (2023), 935-951 [S.H. Hung, G.I. Elliott, T.R. Ramkumar (...), V.P. Kelly *et al.*]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Disruption to tRNA modification by queuine contributes to inflammatory bowel disease', *Cellular and Molecular Gastroenterology and Hepatology* (2023), <http://dx.doi.org/10.1016/j.jcmgh.2023.02.006> [J. Zhang, Y. Zhang, C.J. McGrenaghan, V.P. Kelly, Y. Xia, J. Sun]
- Khan, Amir**, 'Structural basis for the specificity of PPM1H phosphatase for Rab GTPases', *EMBO Reports*, 22: e52675 (2021), 10.15252/embr.202152675 [D. Waschbuesch, K. Berndsen, P. Lis, A. Knebel, Y. PY Lam, D.R. Alessi, A.R. Khan]
- 'Dual arginine recognition of LRRK2 phosphorylated Rab GTPases', *Biophysical Journal*, 120, 9 (2021), 1846-1855 [D. Waschbuesch, E. Purlyte, A.R. Khan]
- McDonald, Andrew**, 'Simulating the enzymes of ganglioside biosynthesis with glycologue', *Beilstein Journal of Organic Chemistry* (2021), doi.org/10.3762/bjoc.17.64 [A.G. McDonald, G.P. Davey]
- 'In silico analysis of the human milk oligosaccharide glycome reveals key enzymes of their biosynthesis', *Scientific Reports*, 27, 12 (1) (2022), 10846 [A.G. McDonald, J. Mariethoz, G.P. Davey, F. Lisacek]
- 'Parameter reliability and understanding enzyme function', *Molecules*, 27, 1 (2022), 263 [A.G. McDonald, K.F. Tipton]
- 'Enzyme nomenclature and classification: the state of the art', *FEBS Journal*, Jan (2022), febs.16274 [A.G. McDonald, K.F. Tipton]
- Mok, Kenneth**, 'Bladder cancer therapy using a conformationally fluid tumoricidal peptide complex', *Nature Communications*, 12, 1 (2021), <http://dx.doi.org/10.1038/s41467-021-23748-y> [A. Brisuda, J.C.S. Ho, P.S. Kamdiyal (...), K. Mok *et al.*]
- 'A scientific journey from discovery to validation of efficacy in cancer patients: HAMLET and alpha1-oleate', *Molecular and Cellular Oncology*, 8, 5 (2021), <http://dx.doi.org/10.1080/23723556.2021.1974278> [J.C.S. Ho, I. Ambite, K.H. Mok, M. Babjuk, C. Svanborg]
- 'In silico analysis of therapeutic antibody aggregation and the influence of glycosylation', *Glycosylation* (2022), 169-183 [H. Jeon, J.M. Hayes, K.H. Mok]
- 'Metabolomics and its applications to personalized medicine', *EKC 2019 conference proceedings*, eds J.M. Park, D.R. Whang, Vienna, Austria, Springer Nature Singapore Pte Ltd (2021), 25-42 [L. Sherlock, K.H. Mok]
- Nolan, Derek**, 'The *Trypanosoma brucei*-derived ketoacids, indole pyruvate and hydroxyphenylpyruvate, induce HO-1 expression and suppress inflammatory responses in human dendritic cells', *Antioxidants*, 11(2022), 164 [H.K. Fitzgerald, S.A. O'Rourke, E. Desmond (...), D.P. Nolan *et al.*]
- 'The trypanosome-derived metabolite indole-3-pyruvate inhibits prostaglandin production in macrophages by targeting COX2', *Journal of immunology (Baltimore, Md.: 1950)*, 207, 10 (2021), 2551-2560 [C. Diskin, S.E. Corcoran, V.J. Tyrrell (...), D.P. Nolan, L.A.J. O'Neill]
- O'Neill, Luke**, 'Caspase-4: a therapeutic target for peptic ulcer disease', *Immunohorizons*, 4, 10 (2021), 627-633 [Z. Zaslona, E. Flis, C. Nulty (...), L.A.J. O'Neill, E.M. Creagh]
- 'Author correction: A guiding map for inflammation (Nature Immunology, (2017), 18, 8, (826-831), 10.1038/ni.3790)', *Nature Immunology*, 22, 2 (2021), 254 [M.G. Netea, F. Balkwill, M. Chonchol, F. Cominelli, M.Y. Donath, C.A. Dinarello]
- 'Signaling metabolite L-2-hydroxyglutarate activates the transcription factor HIF-1 $\alpha$  in lipopolysaccharide-activated macrophages', *Journal of Biological Chemistry*, 298, 2 (2022), <http://hdl.handle.net/2262/98658> [N.C. Williams, D.G. Ryan, A.S.H. Costa (...), C. Frezza, L.A. O'Neill]
- 'The role of itaconate in host defense and inflammation', *Journal of Clinical Investigation*, 132, 2 (2022), <http://hdl.handle.net/2262/98656> [C.G. Peace, L.A.J. O'Neill]
- 'Relationship between type 2 cytokine and inflammasome responses in obesity-associated asthma', *Journal of Allergy and Clinical Immunology*, 149, 4 (2022), 1270-1280 [J.W. Pinkerton, R.Y. Kim, A.C. Brown, B.E. Rae, C. Donovan, P.M. Hansbro, J.C. Horvat]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'Immunothrombosis and the molecular control of tissue factor by pyroptosis: prospects for new anticoagulants', *Biochemical Journal*, 479, 6 (2022), 731-750 [T.A.J. Ryan, R.J.S. Preston, L.A.J. O'Neill]

'Itaconate and itaconate derivatives target JAK1 to suppress alternative activation of macrophages', *Cell Metabolism*, 34, 3 (2022), 487-501.e8 [M.C. Runtsch, S. Angiari, A. Hoofman (...), C. Wang, L.A.J. O'Neill]

'Nrf2 activation reprograms macrophage intermediary metabolism and suppresses the type I interferon response', *iScience*, 25, 2 (2022), <http://hdl.handle.net/2262/98659> [D.G. Ryan, E.V. Knatko, A.M. Casey, J.L. Hukelmann, S. Dayalan Naidu]

'The trypanosome-derived metabolite indole-3-pyruvate inhibits prostaglandin production in macrophages by targeting COX2', *Journal of Immunology (Baltimore, Md.: 1950)*, 207, 10 (2021), 2551-2560 [C. Diskin, S.E. Corcoran, V.J. Tyrrell, A.F. McGettrick, Z. Zaslona, L.A.J. O'Neill]

'Immune-mediated inflammation across disease boundaries: breaking down research silos', *Nature Immunology*, 22, 11 (2021), 1344-1348 [C.D. Buckley, L. Chernajovsky, T. Chernajovsky, L.K. Modis, L.A. O'Neill, E.A. Waterman, P.P. Tak]

'ACLY nuclear translocation in human macrophages drives proinflammatory gene expression by NF- $\kappa$ B acetylation', *Cells*, 10, 11 (2021), <http://dx.doi.org/10.3390/cells10112962> [A. Santarsiero, P. Convertini, S. Todisco (...), L.A.J. O'Neill, V. Infantino]

'4-octyl-itaconate and dimethyl fumarate inhibit COX2 expression and prostaglandin production in macrophages', *Journal of Immunology (Baltimore, Md.: 1950)*, 207, 10 (2021), 2561-2569 [C. Diskin, A. Zotta, S.E. Corcoran (...), V.B. O'Donnell, L.A.J. O'Neill]

'Metabolic regulation of RA macrophages is distinct from RA fibroblasts and blockade of glycolysis alleviates inflammatory phenotype in both cell types', *Cellular and Molecular Life Sciences*, 78, 23 (2021), 7693-7707 [S. Umar, K. Palasiewicz, M.V. Volin (...), L.A.J. O'Neill, S. Shahrara]

'The role of the electron transport chain in immunity', *FASEB Journal*, 35, 12 (2021), <http://dx.doi.org/10.1096/fj.202101161R> [M. Yin, L.A.J. O'Neill]

'Nanoparticle asymmetry shapes an immune response', *Nature*, 601, 7893 (2022), 323-325 [A. Hoofman, L.A.J. O'Neill]

'Choice of SARS-CoV-2 diagnostic test: challenges and key considerations for the future', *Critical Reviews in Clinical Laboratory Sciences* (2022), <http://hdl.handle.net/2262/98654> [F. Baldanti, N.K. Ganguly, G. Wang (...), L.A. O'Neill et al.]

'Creating ATP via creatine kinase B for NLRP3 activation', *Nature Immunology* (2022), <http://dx.doi.org/10.1038/s41590-022-01191-5> [J.E. Toller-Kawahisa, L.A.J. O'Neill]

'SARS-CoV-2 targets MAVS for immune evasion', *Nature Cell Biology*, 23, 7 (2021), 682-683 [A. Zotta, A. Hoofman, L.A.J. O'Neill]

'Author correction: Trained immunity, tolerance, priming and differentiation: distinct immunological processes (Nature Immunology, (2021), 22, 1, (2-6), 10.1038/s41590-020-00845-6)', *Nature Immunology*, 22, 7 (2021), 928 [M. Divangahi, P. Aaby, S.A. Khader (...), R. Xavier, M.G. Netea]

'Glutathione transferase omega 1 confers protection against azoxymethane-induced colorectal tumour formation', *Carcinogenesis*, 42, 6 (2021), 853-863 [P. Tummala, M. Rooke, J.E. Dahlstrom (...), L.A.J. O'Neill, P.G. Board]

'Targeting mitochondria to beat HIV-1', *Nature Immunology*, 22, 4 (2021), 398-399 [E.A. Day, L.A.J. O'Neill]

'Ironing out vaccine efficacy', *Med*, 2, 2 (2021), 113-114 [C.G. Peace, L.A.J. O'Neill]

'Trained immunity, tolerance, priming and differentiation: distinct immunological processes', *Nature Immunology*, 22, 1 (2021), 2-6 [M. Divangahi, P. Aaby, S.A. Khader, L.B. Barreiro, R. Xavier, M.G. Netea]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Can NLRP3 inhibitors improve on dexamethasone for the treatment of covid-19?', *Current Research in Pharmacology and Drug Discovery*, 2, 100048 (2021), <http://dx.doi.org/10.1016/j.crphar.2021.100048> [A. Hoofman, L.A.J. O'Neill]
- 'Macrophage innate training induced by IL-4 and IL-13 activation enhances OXPHOS driven anti-mycobacterial responses', *eLife*, 11, e74690 (2022), <http://dx.doi.org/10.7554/eLife.74690> [M.L.E. Lundahl, M. Mitermite, D.G. Ryan (...), L.A.J. O'Neill *et al.*]
- 'Of flies and men - the discovery of TLRs', *Cells*, 11, 19 (2022), <http://dx.doi.org/10.3390/cells11193127> [H.J. Weiss, L.A.J. O'Neill]
- 'Innate immune signaling and immunothrombosis: new insights and therapeutic opportunities', *European Journal of Immunology*, 52, 7 (2022), 1024-1034 [T.A.J. Ryan, L.A.J. O'Neill]
- 'The itaconate family of immunomodulators grows', *Nature Metabolism*, 4, 5 (2022), 499-500 [A.F. McGettrick, L.A.J. O'Neill]
- 'A vision for cytokine biology with 20/20 clarity', *Function*, 2, 1 (2021), <http://dx.doi.org/10.1093/function/zqaa042> [S.A. Jones, C. Bryant, C.M. Lloyd, I. McInnes, L. O'Neill]
- 'How neutrophil metabolism affects bacterial killing', *Open Biology*, 12, 11 (2022), <http://dx.doi.org/10.1098/rsob.220248> [J.E. Toller-Kawahisa, L.A.J. O'Neill]
- 'Macrophage fumarate hydratase restrains mtRNA-mediated interferon production', *Nature* (2023), 32 [A. Hoofman, C.G. Peace, D.G. Ryan, E.A. Day, M. Yang, C. Frezza, L.A.J. O'Neill]
- Porter, Richard**, 'The peripheral cannabinoid receptor type 1 (CB1) as a molecular target for modulating body weight in man', *Molecules*, 26, 20 (2021), 6178 [S.E. O'Sullivan, A.S. Yates, R. Porter]
- 'An examination of skeletal muscle and hepatic tissue transcriptomes from beef cattle divergent for residual feed intake', *Scientific Reports*, 11, 1 (2021), 8942 [C. McKenna, K. Keogh, R.K. Porter, S.M. Waters, P. Cormican, D.A. Kenny]
- 'Evidence of a role for interleukin-6 in anoikis resistance in oral squamous cell carcinoma', *Medical Oncology*, 39 (2022), 60 [M. Karavyraki, R.K. Porter]
- 'Bioenergetics in human tongue pre-cancerous dysplastic oral keratinocytes and squamous cancer cells', *Bioenergetics Communications (BEC)*, 2022 (2022), [doi.org/10.26124/bec:2022-0011](https://doi.org/10.26124/bec:2022-0011) [M. Karavyraki, E. Gnaiger, R.K. Porter]
- Waschbüsch, Dieter**, 'Structural basis for the specificity of PPM1H phosphatase for Rab GTPases', *EMBO Reports*, 22: e52675 (2021), [10.15252/embr.202152675](https://doi.org/10.15252/embr.202152675) [D. Waschbuesch, K. Berndsen, P. Lis, A. Knebel, Y. PY Lam, D.R. Alessi, A.R. Khan]
- 'Dual arginine recognition of LRRK2 phosphorylated Rab GTPases', *Biophysical Journal*, 120, 9 (2021), 1846-1855 [D. Waschbuesch, E. Purlyte, A.R. Khan]
- Zisterer, Daniela**, 'Cisplatin induces autophagy-associated apoptosis in human oral squamous cell carcinoma (OSCC) mediated in part through reactive oxygen species', *Toxicology and Applied Pharmacology*, 427(2021), 115646 [S. Magnano, P. Hannon Barroeta, R. Duffy, J. O'Sullivan, D.M. Zisterer]
- 'Design and synthesis of multifunctional microtubule targeting agents endowed with dual pro-apoptotic and anti-autophagic efficacy', *European Journal of Medicinal Chemistry*, 235, 114274 (2022), <http://dx.doi.org/10.1016/j.ejmech.2022.114274> [G. Campiani, T. Khan, C. Ulivieri, L. Staiano, C. Papulino, S. Butini, R. Benedetti]
- 'A novel class of oxazepine-based anti-cancer agents induces cell death in primary human CLL cells and efficiently reduces tumor growth in E $\mu$ -TCL1 mice through the JNK/STAT4/p66Shc axis', *Pharmacological Research*, 174, 105965 (2021), <http://dx.doi.org/10.1016/j.phrs.2021.105965> [F. Vanni, L. Lopresti, V. Zurli, A. Kabanova, F. Cattaneo, S. Butini, C. Ulivieri]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'Synthesis, characterisation and mechanism of action of anticancer 3-fluoroazetidin-2-ones', *Pharmaceuticals (Basel, Switzerland)*, 15, 9 (2022), 1044 [A.M. Malebari, G. Duffy Morales, B. Twamley (...), D.M. Zisterer, M.J. Meegan]

'Identification of Src as a therapeutic target in oesophageal adenocarcinoma through functional genomic and high-throughput drug screening approaches', *Cancers*, 14, 15 (2022), <http://dx.doi.org/10.3390/cancers14153726> [N.H. McCabe, L. Stevenson, E. Scanlon (...), J.K. Blayney, R.C. Turkington]

'Evaluation of targeting autophagy for the treatment of malignant rhabdoid tumours', *Cancer Treatment and Research Communications*, 32, 100584 (2022), <http://dx.doi.org/10.1016/j.ctarc.2022.100584> [P. Hannon Barroeta, S. Magnano, M.J. O'Sullivan, D.M. Zisterer]

'Targeting inhibitor of apoptosis proteins (IAPs) with IAP inhibitors sensitises malignant rhabdoid tumour cells to cisplatin', *Cancer Treatment and Research Communications*, 32, 100579 (2022), <http://dx.doi.org/10.1016/j.ctarc.2022.100579> [R. Coyle, M.J. O'Sullivan, D.M. Zisterer]

## IMMUNOLOGY

**Bowie, Andrew**, 'Klebsiella pneumoniae hijacks the toll-IL-1R protein SARM1 in a type I IFN-dependent manner to antagonize host immunity', *Cell Reports*, 40, 6 (2022), 111167 [C. Feriotti, J. Sa-Pessoa, R. Calderon-Gonzalez (...), A.G. Bowie, J.A. Bengoechea]

'SARM1 promotes photoreceptor degeneration in an oxidative stress model of retinal degeneration', *Frontiers in Neuroscience*, 16, 852114 (2022), <http://hdl.handle.net/2262/98561> [L. Gibbons, E. Ozaki, C. Greene (...), A.G. Bowie *et al.*]

'Recent insights into innate immune nucleic acid sensing during viral infection', *Current Opinion in Immunology*, 78, 102250 (2022), <http://dx.doi.org/10.1016/j.coi.2022.102250> [C. Guy, A.G. Bowie]

'Reactive centre loop mutagenesis of serpinb3 to target TMPRSS2 and furin: inhibition of SARS-CoV-2 cell entry and replication', *International Journal of Molecular Sciences*, 23, 20 (2022), 12522 [S. Singh, S. O'Reilly, H. Gewaid, A.G. Bowie, V. Gautier, D.M. Worrall]

'Non-canonical inflammasome activation mediates the adjuvanticity of nanoparticles', *Cell Reports Medicine*, 4, 1 (2023), <http://dx.doi.org/10.1016/j.xcrm.2022.100899> [N. Munoz-Wolf, R.W. Ward, C.H. Hearnden (...), A.G. Bowie *et al.*]

**Canavan, Mary**, 'ACPA status correlates with differential immune profile in patients with rheumatoid arthritis', *Cells*, 10 (3) 64 (2021), doi: 10.33 [A. Floudas, M. Canavan, T. McGarry, R. Mullan, S. Nagpal, D.J. Veale, U. Fearon]

'Loss of balance between protective and pro-inflammatory synovial tissue T-cell polyfunctionality predates clinical onset of rheumatoid arthritis', *Annals of the Rheumatic Diseases* (2021), <http://dx.doi.org/10.1136/annrheumdis-2021-220458> [A. Floudas, N. Neto, C. Orr (...), M. Canavan *et al.*]

'Metabolites as drivers and targets in rheumatoid arthritis', *Clinical and Experimental Immunology* (2021), <http://dx.doi.org/10.1093/cei/uxab021> [M.M. Hanlon, M. Canavan, B.E. Barker, U. Fearon]

'Functionally mature CD11c<sup>+</sup> dendritic cells preferentially accumulate in the inflammatory arthritis synovium', *Frontiers in Immunology* (2021), <http://dx.doi.org/10.3389/fimmu.2021.745226> [M. Canavan, V. Marzaioli, V. Bhargava (...), D.J. Veale, U. Fearon]

'Knowledge of disease, diagnosis, adherence and impact of research in an Irish cohort of patients with inflammatory arthritis', *HRB Open Research*, 4 (2021), 60 [V. Marzaioli, M. Canavan, A. Donnolly (...), D.J. Veale, U. Fearon]

**Carty, Michael**, 'Klebsiella pneumoniae hijacks the toll-IL-1R protein SARM1 in a type I IFN-dependent manner to antagonize host immunity', *Cell Reports*, 40, 6 (2022), 111167 [C. Feriotti, J. Sa-Pessoa, R. Calderon-Gonzalez (...), M. Carty *et al.*]

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**Day, Emily**, 'Targeting mitochondria to beat HIV-1', *Nature Immunology*, 22, 4 (2021), 398-399 [E.A. Day, L.A.J. O'Neill]

'Protein targeting by the itaconate family in immunity and inflammation', *The Biochemical Journal*, 479, 24 (2022), 2499-2510 [E.A. Day, L.A.J. O'Neill]

**Fletcher, Jean**, 'The *Trypanosoma brucei*-derived ketoacids, indole pyruvate and hydroxyphenylpyruvate, induce HO-1 expression and suppress inflammatory responses in human dendritic cells', *Antioxidants*, 11 (2022), 164 [H.K. Fitzgerald, S.A. O'Rourke, E. Desmond (...), J.M. Fletcher, A. Dunne]

'Innate lymphoid cell (ILC) subsets are enriched in the skin of patients with hidradenitis suppurativa', *PLoS ONE*, 18, 2 (2023), e0281688 [A. Petrasca, R. Hambly, O. Molloy (...), J.M. Fletcher *et al.*]

'The mammalian target of rapamycin contributes to synovial fibroblast pathogenicity in rheumatoid arthritis', *Frontiers in Medicine*, 10 (2023), 1029021 [B.E. Barker, M.M. Hanlon, V. Marzaioli (...), J.M. Fletcher *et al.*]

'B-cell-derived transforming growth factor- $\beta$  may drive the activation of inflammatory macrophages and contribute to scarring in hidradenitis suppurativa', *The British Journal of Dermatology*, 188, 2 (2023), 290-310 [C.M. Smith, R. Hambly, S. Gatault (...), J.M. Fletcher *et al.*]

'B-cell and complement signature in severe hidradenitis suppurativa that does not respond to adalimumab', *The British Journal of Dermatology*, 188, 1 (2023), 52-63 [R. Hambly, S. Gatault, C.M. Smith (...), J.M. Fletcher *et al.*]

'Distinct stromal and immune cell interactions shape the pathogenesis of rheumatoid and psoriatic arthritis', *Annals of the Rheumatic Diseases* (2022), annrheumdis-2021-221761 [A. Floudas, C.M. Smith, O. Tynan (...), J.M. Fletcher *et al.*]

'Mechanism of action of dimethyl fumarate: a small molecule with big effects', *The British Journal of Dermatology*, 185, 3 (2021), 483-484 [B. Kirby, J.M. Fletcher]

'The pathogenesis of Parkinson's disease: a complex interplay between astrocytes, microglia, and T lymphocytes?', *Frontiers in Neurology*, 12 (2021), 666737 [A.N. MacMahon Copas, S.F. McCormish, J.M. Fletcher, M.A. Caldwell]

'Animated teaching improves student learning of human gastrulation and neurulation', *Annals of Anatomy*, (2023) [C. O'Connor, K. Jordan, T. Vagg (...), J. Fletcher, E.J. Downer]

**Lavelle, Edward**, 'Macrophage innate training induced by IL-4 and IL-13 activation enhances OXPPOS driven anti-mycobacterial responses', *eLife*, 11, e74690 (2022), <http://dx.doi.org/10.7554/eLife.74690> [M.L.E. Lundahl, M. Mitermite, D.G. Ryan (...), S.V. Gordon, E.C. Lavelle]

'Resolving adjuvant mode of action to enhance vaccine efficacy', *Current Opinion in Immunology*, 77, 102229 (2022), <http://dx.doi.org/10.1016/j.coi.2022.102229> [J.L. Turley, E.C. Lavelle]

'Myeloid cell-derived proteases produce a proinflammatory form of IL-37 that signals via IL-36 receptor engagement', *Science Immunology*, 7, 78 (2022), eade5728 [G.P. Sullivan, P. Davidovich, N. Munoz-Wolf (...), E.C. Lavelle, S.J. Martin]

'Non-canonical inflammasome activation mediates the adjuvanticity of nanoparticles', *Cell Reports Medicine*, 4, 1 (2023), <http://dx.doi.org/10.1016/j.xcrm.2022.100899> [N. Munoz-Wolf, R.W. Ward, C.H. Hearnden (...), E. Creagh, E.C. Lavelle]

'Immunostimulatory nanoparticles go viral', *Nature Materials*, 22, 3 (2023), 273-275 [J. Huete-Carrasco, E.C. Lavelle]

**McGettrick-Dillon, Anne**, 'Itaconate and itaconate derivatives target JAK1 to suppress alternative activation of macrophages', *Cell Metabolism*, 34, 3 (2022), 487-501.e8 [M.C. Runtsch, S. Angiari, A. Hooftman (...), A.F. McGettrick *et al.*]

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- 'The trypanosome-derived metabolite indole-3-pyruvate inhibits prostaglandin production in macrophages by targeting COX2', *Journal of Immunology (Baltimore, Md.: 1950)*, 207, 10 (2021), 2551-2560 [C. Diskin, S.E. Corcoran, V.J. Tyrrell (...), A.F. McGettrick *et al.*]
- 'The itaconate family of immunomodulators grows', *Nature Metabolism*, 4, 5 (2022), 499-500 [A.F. McGettrick, L.A.J. O'Neill]
- 'Two for the price of one: itaconate and its derivatives as an anti-infective and anti-inflammatory immunometabolite', *Current Opinion in Immunology*, 80 (2023), 102268 [A.F. McGettrick, L.A. O'Neill]
- 'Macrophage fumarate hydratase restrains mtRNA-mediated interferon production', *Nature* (2023), 32 [A. Hoofman, C.G. Peace, D.G. Ryan (...), A.F. McGettrick *et al.*]
- McLoughlin, Rachel**, 'Severe covid-19 is characterised by inflammation and immature myeloid cells early in disease progression', *Heliyon*, 8, 4 (2022), e09230-e09236 [L. Townsend, A.H. Dyer, A. Naughton (...), J.H. Kelliher, C. Ni Cheallaigh]
- 'Human MAIT cells respond to *Staphylococcus aureus* with enhanced anti-bacterial activity', *Microorganisms*, 10, 1 (2022), <http://dx.doi.org/10.3390/microorganisms10010148> [A.J.R. Cooper, J. Clegg, F.C. Cassidy, A.E. Hogan, R.M. McLoughlin]
- 'The airway microbiome-IL-17 axis: a critical regulator of chronic inflammatory disease', *Clinical Reviews in Allergy and Immunology*, March 11 (2022), <http://dx.doi.org/10.1007/s12016-022-08928-y> [J.M. Mannion, R.M. McLoughlin, S.J. Lalor]
- Mills, Kingston**, 'Innate lymphoid cells recruit T cells to turn up the heat on tumors', *Cancer Cell*, 40, 4 (2022), 362-364 [K.H.G. Mills]
- 'IL-17 and IL-17-producing cells in protection versus pathology', *Nature Reviews Immunology* (2022), <http://dx.doi.org/10.1038/s41577-022-00746-9> [K.H.G. Mills]
- 'The circadian clock influences T cell responses to vaccination by regulating dendritic cell antigen processing', *Nature Communications*, 13, 1 (2022), 7217 [M.P. Cervantes-Silva, R.G. Carroll, M.M. Wilk (...), K.H.G. Mills, A.M. Curtis]
- 'Development of a risk assessment profile tool to determine appropriate use of SARS-CoV-2 rapid antigen detection tests for different activities and events in Ireland, since October 2021', *Euro Surveillance: Bulletin Europeen Sur Les Maladies Transmissibles - European Communicable Disease Bulletin*, 27, 3 (2022), <http://dx.doi.org/10.2807/15607917.es.2022.27.3.2101202> [P.W. Mallon, M. Horgan, C.G. McAloon (...)]
- 'Bystander activation of *Bordetella pertussis*-induced nasal tissue-resident memory CD4 T cells confers heterologous immunity to *Klebsiella pneumoniae*', *European Journal of Immunology* (2023), <http://dx.doi.org/10.1002/eji.202250247> [L.M. Curham, J.M. Mannion, C.M. Daly (...), R.M. McLoughlin, K.H.G. Mills]
- 'Modulation of haematopoiesis by protozoal and helminth parasites', *Parasite Immunology* (2023), e12975 [K.T. Cunningham, K.H.G. Mills]
- Sheedy, Frederick**, 'Macrophage innate training induced by IL-4 and IL-13 activation enhances OXPHOS driven anti-mycobacterial responses', *eLife*, 11, e74690 (2022), <http://dx.doi.org/10.7554/eLife.74690> [M.L.E. Lundahl, M. Mitermite, D.G. Ryan (...), F.J. Sheedy *et al.*]
- 'Respiratory tract infections in diabetes - lessons from tuberculosis and influenza to guide understanding of covid-19 severity', *Frontiers in Endocrinology*, 13, 919223 (2022), <http://dx.doi.org/10.3389/fendo.2022.919223> [A. Al-Sayyar, K.D. Hulme, R. Thibaut (...), F.J. Sheedy *et al.*]
- 'Obesity, covid-19 and innate immunometabolism', *British Journal of Nutrition*, 125, 6 (2021), 628-632 [L.E. Gleeson, H.M. Roche, F.J. Sheedy]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Von Willebrand factor links primary hemostasis to innate immunity', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-022-33796-7> [C. Drakeford, S. Aguila, F. Roche (...), F.J. Sheedy *et al.*]
- Stevenson, Nigel*, 'Neutrophils: need for standardized nomenclature', *Frontiers in Immunology* (2021), <http://hdl.handle.net/2262/98541> [E. McKenna, A.U. Mhaonaigh, R. Wubben (...), N.J. Stevenson *et al.*]
- 'Potential role of flavivirus ns2b-ns3 proteases in viral pathogenesis and anti-flavivirus drug discovery employing animal cells and models: a review', *Viruses*, 14, 1 (2022), <http://hdl.handle.net/2262/98546> [A. Wahaab, B.E. Mustafa, M. Hameed (...), N.J. Stevenson *et al.*]
- 'Vaccine trials during a pandemic: potential approaches to ethical dilemmas', *Trials*, 22, 1 (2021), <http://hdl.handle.net/2262/98539> [M. Alqahtani, S.I. Mallah, N. Stevenson, S. Doherty]
- 'Inhibition of the IFN- $\alpha$  JAK/STAT pathway by MERS-CoV and SARS-CoV-1 proteins in human epithelial cells', *Viruses*, 14, 4 (2022), <http://hdl.handle.net/2262/98545> [Y. Zhang, S. Gargan, F.M. Roche, M. Frieman, N.J. Stevenson]
- 'Unravelling the immunomodulatory effects of viral ion channels, towards the treatment of disease', *Viruses*, 13, 11 (2021), <http://hdl.handle.net/2262/98540> [S. Gargan, N.J. Stevenson]
- 'The high prevalence of asymptomatic SARS-CoV-2 infection reveals the silent spread of covid-19', *International Journal of Infectious Diseases*, 105(2021), 656-661 [M.A. Almadhi, A. Abdulrahman, S.A. Sharaf (...), N.J. Stevenson *et al.*]
- 'An overview of current knowledge of deadly CoVs and their interface with innate immunity', *Viruses*, 13, 4 (2021), <http://hdl.handle.net/2262/98544> [Y. Zhang, S. Gargan, Y. Lu, N.J. Stevenson]
- 'Neutrophils in covid-19: not innocent bystanders', *Frontiers in Immunology*, 13, 864387 (2022), <http://dx.doi.org/10.3389/fimmu.2022.864387> [E. McKenna, R. Wubben, J.M. Isaza-Correa (...), N.J. Stevenson *et al.*]
- 'The effect of age, gender and comorbidities upon SARS-CoV-2 spike antibody induction after two doses of sinopharm vaccine and the effect of a Pfizer/BioNtech booster vaccine', *Frontiers in Immunology*, 13, 817597 (2022), <http://dx.doi.org/10.3389/fimmu.2022.817597> [E. Farid, J. Herrera-Urbe, N.J. Stevenson]
- 'Long term detection and quantification of SARS-CoV-2 RNA in wastewater in Bahrain', *Journal of Hazardous Material Advances*, 7 (2022), 1-9 [J. Herrera-Urbe, P. Naylor, G. Rajab, G. Coskuner, M.S. Jassim, M. Al-Qahtani, N.J. Stevenson]

## School of Chemistry

- Baker, Robert*, 'The chemistry of the actinides', *The lanthanides and actinides*, eds S.T. Liddle D.P. Mills, L.S. Natrajan, London, World Scientific (2022), 37-77 [R.J. Baker]
- 'Insights into the solution structure of the hydrated uranyl ion from neutron scattering and EXAFS experiments', *Dalton Transactions*, 51 (2022), 13631-1363 [S.J. Edwards, D.T. Bowron, R.J. Baker]
- Batchelor-McAuley, Chris*, 'Calcium carbonate dissolution from the laboratory to the ocean: kinetics and mechanism', *Chemistry - A European Journal* (2022), <http://dx.doi.org/10.1002/chem.202202290> [C. Batchelor-McAuley, M. Yang, R.E.M. Rickaby, R.G. Compton]
- 'Quantifying the extent of calcification of a coccolithophore using a coulter counter', *Analytical Chemistry* (2022), <http://dx.doi.org/10.1021/acs.analchem.2c01971> [X. Fan, C. Batchelor-McAuley, M. Yang (...), H.A. Bouman, R.G. Compton]
- 'Electrochemical heterogeneity at the nanoscale: diffusion to partially active nanocubes', *The Journal of Physical Chemistry Letters* (2022), 7689-7693 [R. Wong, C. Batchelor-McAuley, M. Yang, R.G. Compton]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Single-entirety coccolithophore electrochemistry shows size is no guide to the degree of calcification', *Environmental Science: Advances* (2022), <http://dx.doi.org/10.1039/d2va00025c> [M. Yang, C. Batchelor-McAuley, S. Barton, R.E.M. Rickaby, H.A. Bouman, R.G. Compton]
- 'Substrate mediated dissolution of redox active nanoparticles; electron transfer over long distances', *Nano Research*, 15, 1 (2022), 429-437 [R.-C. Xie, C. Batchelor-McAuley, M. Yang, R.G. Compton]
- 'Voltammetry in sheep's blood: membrane-free amperometric measurement of O<sub>2</sub> concentration', *Talanta*, 239 (2022), <http://dx.doi.org/10.1016/j.talanta.2021.123127> [D. Li, C. Batchelor-McAuley, R.G. Compton]
- 'Towards direct electroanalysis in seawater: understanding the role of the buffer capacity of seawater in proton-coupled electron transfer reactions', *The Journal of Physical Chemistry C* (2021), <http://dx.doi.org/10.1021/acs.jpcc.1c09142> [R.L. Pindar, C. Batchelor-McAuley, M. Yang, R. G. Compton]
- 'Opto-electrochemical dissolution reveals coccolith calcium carbonate content', *Angewandte Chemie International Edition*, 60, 38 (2021), 20999-21006 [M. Yang, C. Batchelor-McAuley, S. Barton, R.E.M. Rickaby, H.A. Bouman, R.G. Compton]
- 'A new approach to characterising the porosity of particle modified electrodes: potential step chronoamperometry and the diffusion indicator', *Applied Materials Today*, 25 (2021), <http://dx.doi.org/10.1016/j.apmt.2021.101249> [M. Yang, C. Batchelor-McAuley, E. Kätelhön, R.G. Compton]
- 'A simplified methodology: pH sensing using an *in situ* fabricated Ir electrode under neutral conditions', *Journal of Solid State Electrochemistry*, 25, 12 (2021), 2821-2833 [Y. Chen, X. Li, D. Li, C. Batchelor-McAuley, R.G. Compton]
- 'Characterising Fickian diffusion on the surface of a sphere', *Journal of Electroanalytical Chemistry*, 900 (2021), <http://dx.doi.org/10.1016/j.jelechem.2021.115738> [O. Orrick, M. Yang, C. Batchelor-McAuley, R.G. Compton]
- 'Methanol oxidation at single platinum nanoparticles', *Journal of Electroanalytical Chemistry*, 896 (2021), <http://dx.doi.org/10.1016/j.jelechem.2021.115438> [X. Chang, C. Batchelor-McAuley, R.G. Compton]
- 'The steady-state diffusional flux to isolated square cuboids in solution and supported on an inert substrate', *Journal of Electroanalytical Chemistry*, 903 (2021), <http://dx.doi.org/10.1016/j.jelechem.2021.115818> [R. Wong, C. Batchelor-McAuley, M. Yang, R.G. Compton]
- Boland, John**, 'Alcohol pre-treatment to eliminate the interference of micro additive particles in the identification of microplastics using Raman spectroscopy', *Environmental Science and Technology*, 56, 17 (2022), 12158-12168 [D. Li, E.D. Sheerin, Y. Shi, L. Xiao, L. Yang, J.J. Boland, J. Wang]
- 'Crystal engineering studies of a series of pyridine-3,5-dicarboxamide ligands possessing alkyl ester arms, and their coordination chemistry', *Results in Chemistry*, 4, 100679 (2022), <http://dx.doi.org/10.1016/j.rechem.2022.100679> [A.D. Lynes, J.I. Lovitt, C. Rotella, J.J. Boland, T. Gunnlaugsson, C.S. Hawes]
- Colavita, Paula**, 'Controlling the carbon-bio interface via glycan functional adlayers for applications in microbial fuel cell bioanodes', *Molecules*, 26, 16 (2021), <http://dx.doi.org/10.3390/molecules26164755> [A. Iannaci, A. Myles, T. Philippon, P.E. Colavita]
- 'Aggregation of protein therapeutics enhances their immunogenicity: causes and mitigation strategies', *RSC Chemical Biology*, 2, 4 (2021), 1004-1020 [M.L.E. Lundahl, S. Fogli, P.E. Colavita, E.M. Scanlan]
- 'Surface free energy dominates the biological interactions of postprocessed additively manufactured Ti-6Al-4V', *ACS Biomaterials Science and Engineering* (2022) [V.M. Villapun Puzas, L.N. Carter, C. Schroder (...), P.E. Colavita *et al.*]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Electrochemical detection of isolated nanoscale defects in 2D transition metal dichalcogenides', *Journal of Physical Chemistry C*, 126, 28 (2022), 11636-11641 [M.B. Cabre, A.E. Paiva, M. Velicky, P.E. Colavita, K. McKelvey]
- 'Nanoscaffold effects on the performance of air-cathodes for microbial fuel cells: sustainable Fe/N-carbon electrocatalysts for the oxygen reduction reaction under neutral pH conditions', *Bioelectrochemistry*, 142, 107937 (2021) [A. Iannaci, S. Ingle, C. Dominguez (...), F. Barriere, P.E. Colavita]
- 'Electrochemical kinetics as a function of transition metal dichalcogenide thickness', *Electrochimica Acta*, 393, 139027 (2021), <http://dx.doi.org/10.1016/j.electacta.2021.139027> [M. Brunet Cabre, A.E. Paiva, M. Velicky, P.E. Colavita, K. McKelvey]
- 'MoS<sub>2</sub>/carbon heterostructured catalysts for the hydrogen evolution reaction: N-doping modulation of substrate effects in acid and alkaline electrolytes', *Carbon*, 202, 2 (2023), 70-80 [H. Nolan]
- 'Microsphere-supported gold nanoparticles for SERS detection of malachite green', *Materials Advances* (2023), 19220-19225 [D.T. Hinds, S.A. Belhout, P.E. Colavita, A.D. Ward, S.J. Quinn]
- 'Isolation of pseudocapacitive surface processes at monolayer MXene flakes reveals delocalized charging mechanism', *Nature Communications*, 14, 1 (2023) [M. Brunet Cabre, D. Spurling, P. Martinuz, H. Nolan, V. Nicolosi, P.E. Colavita, K. McKelvey]
- Connon, Stephen**, 'The human tRNA-guanine transglycosylase displays promiscuous nucleobase preference but strict tRNA specificity', *Nucleic Acids Research* (2021), 4877-4890 [C. Fergus, M. Al-Qasem, M. Cotter (...), S.J. Connon, V.P. Kelly]
- 'De novo designed  $\beta$ -lysine derivatives can both augment and diminish the proliferation rates of *E. coli* through the action of elongation factor P', *Bioorganic and Medicinal Chemistry Letters*, 59, 128545 (2022), <https://doi.org/10.1016/j.bmcl.2022.128545> [C.M. McDonnell, M. Ghanim, J.M. Southern, V.P. Kelly, S.J. Connon]
- 'The kinetic resolution of oxazinones by alcoholysis: access to orthogonally protected  $\beta$ -amino acids', *Organic and Biomolecular Chemistry*, 19, 34 (2021), 7348-7352 [S.A. Cronin, S.J. Connon]
- 'Base-free enantioselective S<sub>N</sub>2 alkylation of 2-oxindoles via bifunctional phase-transfer catalysis', *Beilstein Journal of Organic Chemistry*, 17 (2021), 2287-2294 [M. Litvajova, E. Sorrentino, B. Twamley, S.J. Connon]
- 'Mechanistic insights into the organocatalytic kinetic resolution of oxazinones through alcoholysis', *European Journal of Organic Chemistry*, 2022, 3 (2022), <http://dx.doi.org/10.1002/ejoc.202100818> [C. Trujillo, S.A. Cronin, S.J. Connon]
- 'Preparation of lactams from cyclic anhydrides via N-carboxyanhydride intermediates', *European Journal of Organic Chemistry*, 2021, 40 (2021), 5540-5544 [S.N. Smith, S. Connon]
- 'Enantioselective N-heterocyclic carbene-catalysed intermolecular crossed benzoin condensations: improved catalyst design and the role of *in situ* racemisation', *Organic and Biomolecular Chemistry*, 19, 1 (2021), 248-258 [E.G. Delany, S.J. Connon]
- 'Catalytic, asymmetric azidations at carbonyls: achiral and meso-anhydride desymmetrisation affords enantioenriched-lactams', *Organic and Biomolecular Chemistry*, 20, 32 (2022), 6384-6393 [S.N. Smith, C. Trujillo, S.J. Connon]
- Delaney, Colm**, 'Direct laser writing of vapour-responsive photonic arrays', *Journal of Materials Chemistry C*, 9 (2021), 11674-11678 [C. Delaney, J. Qian, X. Zhang, R. Potyrailo, A.L. Bradley, L. Florea]
- 'Temperature-responsive 4D liquid crystal microactuators fabricated by direct laser writing by two-photon polymerization', *Small Structures* (2021), 10.1002/ssr.2 [M. del Pozo, C. Delaney, M. Pilz da Cunha, M.G. Debije, L. Florea, A.P.H.J. Schenning]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'High aspect ratio polymeric nanoneedle arrays', *Macromolecular Materials and Engineering*, 306, 4 (2021), 2000754 [J.C. McCormack, L. Podhorska, C. Delaney, F. Zhang, B.J. Rodriguez, S.M. Kelleher]
- Draper, Sylvia**, 'Exploring the dark: detecting long-lived Nile Red 3ILCT states in Ru(ii) polypyridyl photosensitisers', *Journal of Materials Chemistry C* (2021), <http://dx.doi.org/10.1039/d1tc02830h> [C. Condon, R. Conway-Kenny, X. Cui, L.J. Hallen, B. Twamley, J. Zhao, G.W. Watson, S.M. Draper]
- 'Ru(ii) and Ir(iii) phenanthroline-based photosensitisers bearing: O -carborane: PDT agents with boron carriers for potential BNCT', *Biomaterials Science*, 9, 16 (2021), 5691-5702 [R. Conway-Kenny, A. Ferrer-Ugalde, O. Careta, X. Cui, S.M. Draper]
- 'Accessing unsymmetrical Ru(ii) bipyridine complexes: a versatile synthetic mechanism for fine tuning photophysical properties', *Chemical Communications*, 59, 3 (2022), 330-333 [L. Hallen, A.M. Horan, B. Twamley, E.M. McGarrigle, S.M. Draper]
- Dunne, Peter**, 'Partially oxidised boron nitride as a 2D nanomaterial for nanofiltration applications', *Nanoscale Advances*, 4, 22 (2022), 4895-4904 [F. Purcell-Milton, M.L. Casasin Garcia, A.S. Arjona (...), P. Dunne, Y.K. Gun'ko]
- 'Solvothermal synthesis of soluble, surface modified anatase and transition metal doped anatase hybrid nanocrystals', *Nanoscale Advances*, 4, 24 (2022), 5343-5354 [A.S. Bathe, A. Sanz Arjona, A. Regan (...), R.I. Walton, P.W. Dunne]
- 'High-performance boron nitride based membranes for water purification', *Nanomaterials*, 12, 3 (2022), <http://dx.doi.org/10.3390/nano12030473> [F. Purcell-Milton, A. Sanz Arjona, M.L. Casasin Garcia, M. Ward, A. Rafferty, K. McKelvey, P. Dunne, Y.K. Gun'ko]
- Florea, Larisa**, 'Two-photon polymerization of sugar responsive 4D microstructures', *Advanced Functional Materials* (2023) [A. Ennis, D. Nicdao, S. Kolagatla (...), C. Delaney, L. Florea]
- Garcia Melchor, Max**, 'Rational design of water oxidation catalysts informed by computational and experimental investigations', *Chem Catalysis*, 2, 8 (2022), 1838-1840 [M. Garcia-Melchor, H. Zhang]
- 'Interrogating the oxygen evolution reaction mechanism at the atomic scale', *Chem Catalysis*, 2, 8 (2022), 1835-1837 [H. Zhang, M. Garcia-Melchor]
- ' $\gamma$ -Agostic interactions in (<sup>Mes</sup>CCC)Fe-Mes(L) complexes', *Chemical Communications*, 58, 69 (2022), 9626-9629 [D.C. Najera, M.N. Penas-Defrutos, M. Garcia-Melchor, A.R. Fout]
- 'Secondary coordination sphere influences the formation of Fe(III)-O or Fe(III)-OH in nitrite reduction: a synthetic and computational study', *Inorganic Chemistry*, 61, 21 (2022), 8182-8192 [Y.J. Park, M.N. Penas-Defrutos, M.J. Drummond (...), M. Melchor, A.R. Fout]
- 'Problematic ArF-alkynyl coupling with fluorinated aryls. From partial success with alkynyl stannanes to efficient solutions via mechanistic understanding of the hidden complexity', *Journal of the American Chemical Society*, 145, 1 (2023), 527-536 [G. Marcos-Ayuso, M.N. Penas-Defrutos, A.M. Gallego, M. Garcia-Melchor, J.M. Martinez-Illarduya, P. Espinet]
- 'Demonstrating the source of inherent instability in NiFe LDH-based OER electrocatalysts', *Journal of Materials Chemistry A* (2023), <http://dx.doi.org/10.1039/d2ta07261k> [D. Tyndall, M.J. Craig, L. Gannon (...), M Garcia-Melchor *et al.*]
- 'Building square planar cobalt (II) complexes via sodium mediated cobaltation of fluoroarenes', *Angewandte Chemie- International Edition*, 61, 49 (2022), <http://dx.doi.org/10.1002/anie.202213246> [A. Logallo, M. Mu, M. Garcia-Melchor, E. Hevia]
- Gounko, Iouri**, 'Optimization of Zn-Mn ferrite nanoparticles for low frequency hyperthermia: exploiting the potential of superquadratic field dependence of magnetothermal response', *Applied Physics Letters*, 120, 10 (2022), <http://dx.doi.org/10.1063/5.0082857> [N.N. Liu, A.P. Pyatakov, M.N. Zharkov (...), Y.K. Gun'Ko, A.M. Tishin]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Two-dimensional chiroptically active copper oxide nanostructures', *Journal of Physical Chemistry C*, 126, 44 (2022), 18980-18987 [L. Hughes, F. Purcell-Milton, S. Cardiff, V. Nicolosi, Y.K. Gun'ko]
- 'Chiral non-stoichiometric ternary silver indium sulfide quantum dots: investigation on the chirality transfer by cysteine', *Nanoscale*, 14, 33 (2022), 12174-12182 [L. Branzi, F. Purcell-Milton, C. Cressoni (...), Y.K. Gun'ko, A. Benedetti]
- 'The 'field or frequency' dilemma in magnetic hyperthermia: the case of Zn-Mn ferrite nanoparticles', *Journal of Magnetism and Magnetic Materials*, 555, 169379 (2022), <http://dx.doi.org/10.1016/j.jmmm.2022.169379> [N.N. Liu, A.P. Pyatakov, A.M. Saletsky (...), Y.K. Gun'ko, A.M. Tishin]
- 'Partially oxidised boron nitride as a 2D nanomaterial for nanofiltration applications', *Nanoscale Advances*, 4, 22 (2022), 4895-4904 [F. Purcell-Milton, M.L. Casasin Garcia, A.S. Arjona, K. McKelvey, P. Dunne, Y.K. Gun'ko]
- Gunnlaugsson, Thorfinnur, 'Real-time multi-photon tracking and bioimaging of glycosylated theranostic prodrugs upon specific enzyme triggered release', *Chemistry - A European Journal*, 28, 3 (2022), <http://dx.doi.org/10.1002/chem.202103858> [L.A. Marchetti, G.J. McManus, D.M. Lynch, R.B.P. Elmes, D.C. Williams, T. Gunnlaugsson, E.M. Scanlan]
- 'Hook, line, and sinker! Spectroscopic studies of bi-modular mono- and bis-1,8-naphthalimide-Ru(bpy)<sub>3</sub>-conjugates as DNA 'light switches'', *Inorganic Chemistry*, 61, 31 (2022), 12073-12086 [G.J. Ryan, T. Gunnlaugsson, S.J. Quinn]
- 'Design, synthesis, and anticancer studies of a p-cymene-Ru(II)-curcumin organometallic conjugate based on a fluorescent 4-amino-1,8-naphthalimide Tröger's base scaffold', *Inorganic Chemistry*, 61, 30 (2022), 11592-11599 [B. Mohan, G.J. McManus, T. Gunnlaugsson, S. Shanmugaraju]
- 'Hierarchical supramolecular co-assembly formation employing multi-component light-harvesting charge transfer interactions giving rise to long-wavelength emitting luminescent microspheres', *Chemical Science*, 13, 26 (2022), 7805-7813 [T. Gorai, J.I. Lovitt, D. Umadevi, G. McManus, T. Gunnlaugsson]
- 'Lanthanide luminescence from supramolecular hydrogels consisting of bio-conjugated picolinic-acid-based guanosine quadruplexes', *Chem*, 8, 5 (2022), 1395-1414 [O. Kotova, C. O'Reilly, S.T. Barwich (...), M.E. Möbius, T. Gunnlaugsson]
- 'Recent advances in the development of the btp motif: a versatile terdentate coordination ligand for applications in supramolecular self-assembly, cation and anion recognition chemistries', *Coordination Chemistry Reviews*, 449, 214206 (2021), <http://dx.doi.org/10.1016/j.ccr.2021.214206> [A.F. Henwood, I.N. Hegarty, E.P. McCarney, J.I. Lovitt, S. Donohoe, T. Gunnlaugsson]
- 'Macrocyclic: Vs. [2]catenane btp structures: influence of (aryl) substitution on the self templation of btp ligands in macrocyclic synthesis', *Organic and Biomolecular Chemistry*, 19, 46 (2021), 10189-10200 [E.P. McCarney, W.J. McCarthy, J.I. Lovitt, T. Gunnlaugsson]
- 'Fluorescent 3-amino-1,8-naphthalimide Tröger's bases (3-amino-TBNaps) incorporating protected  $\alpha$ -amino acids', *Tetrahedron Letters*, 83, 153405 (2021), <http://dx.doi.org/10.1016/j.tetlet.2021.153405> [S.A. Murphy, C. Phelan, S. Shanmugaraju, S. Blasco, T. Gunnlaugsson]
- 'Effect of alkyl chain length on the photophysical, photochemical, and photobiological properties of ruthenium(II) polypyridyl complexes for their application as DNA-targeting, cellular-imaging, and light-activated therapeutic agents', *ACS Applied Bio Materials*, 4, 9 (2021), 6664-6681 [S.A. Bright, G.J. McManus, G. Orellana, D.C. Williams, J.M. Kelly, T. Gunnlaugsson]
- 'Fluorescent 4-amino-1,8-naphthalimide Tröger's bases (TBNaps) possessing (orthogonal)  $\alpha$ -amino acids', esters and di-peptides and their solvent dependent photophysical properties', *Organic and Biomolecular Chemistry*, 19, 31 (2021), 6817-6833 [S.A. Murphy, C. A. Phelan, E.B. Veale, O. Kotova, S. Comby, T. Gunnlaugsson]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Fluorescent 4-amino-1,8-naphthalimide Träger's bases possessing conjugated 4-amino-1,8-naphthalimide moieties and their potential fullerenes host-guest complexes', *Results in Chemistry*, 3, 100128 (2021), <http://dx.doi.org/10.1016/j.rechem.2021.100128> [S.A. Murphy, O. Kotova, S. Comby, T. Gunnlaugsson]
- '[Re(CO)<sub>3</sub>(5-PAN)Cl], a rhenium(i) naphthalimide complex for the visible light photocatalytic reduction of CO<sub>2</sub>', *Dalton Transactions*, 50, 10 (2021), 3479-3486 [D.R. Case, A. Spear, A.F. Henwood (...), T. Gunnlaugsson *et al.*]
- 'Ruthenium-centred btp glycoclusters as inhibitors for: *Pseudomonas aeruginosa* biofilm formation', *RSC Advances*, 11, 27 (2021), 16318-16325 [C. O'Reilly, S. Blasco, B. Parekh, H. Collins, G. Cooke, T. Gunnlaugsson, J.P. Byrne]
- 'Squaramide-based self-associating amphiphiles for anion recognition', *ChemPlusChem*, 86, 8 (2021), 1058-1068 [L.K. Kumawat, C. Wynne, E. Cappello (...), T. Gunnlaugsson, R.B.P. Elmes]
- 'Mechanically interlocked chiral self-templated [2]Catenanes from 2,6-Bis(1,2,3-triazol-4-yl)pyridine (btp) Ligands', *Chemistry - A European Journal*, 27, 47 (2021), 12052-12057 [E.P. McCamey, J.I. Lovitt, T. Gunnlaugsson]
- 'Generating water/MeOH-soluble and luminescent polymers by grafting 2,6-bis(1,2,3-triazol-4-yl)pyridine (btp) ligands onto a poly(ethylene-alt-maleic anhydride) polymer and cross-linking with terbium(iii)', *Organic and Biomolecular Chemistry* (2023), <http://dx.doi.org/10.1039/d2ob02259a> [I.N. Hegarty, A.F. Henwood, S.J. Bradberry, T. Gunnlaugsson]
- 'Luminescent (metallo-supramolecular) cross-linked lanthanide hydrogels from a btp (2,3-bis(1,2,3-triazol-4-yl)picolinamide) monomer give rise to strong Tb(iii) and Eu(iii) centred emissions', *Materials Chemistry Frontiers* (2023), <http://dx.doi.org/10.1039/d2qm00998f> [I.N. Hegarty, S.J. Bradberry, J.I. Lovitt, J.M. Delente, N. Willis-Fox, R. Daly, T. Gunnlaugsson]
- 'Glycosidase activated prodrugs for targeted cancer therapy', *Chemical Society Reviews*, 51, 23 (2022), 9694-9716 [H. Martin, L.R. Lazaro, T. Gunnlaugsson, E.M. Scanlan]
- 'Time-resolved infra-red studies of photo-excited porphyrins in the presence of nucleic acids and in HeLa tumour cells: insights into binding site and electron transfer dynamics', *Physical Chemistry Chemical Physics*, 24, 44 (2022), 27524-27531 [P.M. Keane, C. Zehe, F.E. Poynton (...), T. Gunnlaugsson *et al.*]
- 'Crystal engineering studies of a series of pyridine-3,5-dicarboxamide ligands possessing alkyl ester arms, and their coordination chemistry', *Results in Chemistry*, 4, 100679 (2022), <http://dx.doi.org/10.1016/j.rechem.2022.100679> [A.D. Lynes, J.I. Lovitt, C. Rotella, J.J. Boland, T. Gunnlaugsson, C.S. Hawes]
- Hobbs, Richard**, 'Single indium atoms and few-atom indium clusters anchored onto graphene via silicon heteroatoms', *ACS Nano*, 15, 9 (2021), 14373-14383 [K. Elibol, C. Mangler, D.D. O'Regan (...), R.G. *et al.*]
- 'Nanoscale mapping of shifts in dark plasmon modes in sub 10 nm aluminum nanoantennas', *Nanotechnology*, 33 (2022), 475203 [K. Elibol, C. Downing, R.G. Hobbs]
- 'Linear indium atom chains at graphene edges', *NPJ 2D Materials and Applications*, 7 (2023), 2 [K. Elibol, T. Susi, C. Mangler (...), R.G. Hobbs *et al.*]
- Kelly, John**, '3D bioprinting of cartilaginous templates for large bone defect healing', *Acta Biomaterialia* (2022), <http://dx.doi.org/10.1016/j.actbio.2022.07.037> [P. Pitacco, J.M. Sadowska, F.J. O'Brien, D.J. Kelly]
- 'Bioprinting of structurally organized meniscal tissue within anisotropic melt electrowritten scaffolds', *Acta Biomaterialia*, 158 (2023), 216-227 [X. Barcelo, K.F. Eichholz, I.F. Goncalves, O. Garcia, D.J. Kelly]
- 'Biofabrication of poly(glycerol sebacate) scaffolds functionalized with a decellularized bone extracellular matrix for bone tissue engineering', *Bioengineering*, 10, 1 (2023), <http://dx.doi.org/10.3390/bioengineering10010030> [S. Guler, K. Eichholz, F. Chariyev-Prinz, P. Pitacco, H.M. Aydin, D.J. Kelly]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Evaluation of a co-culture of rapidly isolated chondrocytes and stem cells seeded on tri-layered collagen-based scaffolds in a caprine osteochondral defect model', *Biomaterials and Biosystems*, 8, 100066 (2022), <http://dx.doi.org/10.1016/j.bbiosy.2022.100066> [T.J. Levingstone, E.J. Sheehy, C.J. Moran (...), D.J. Kelly *et al.*]
- 'Macrophage metabolic profile is altered by hydroxyapatite particle size', *Acta Biomaterialia* (2023), <http://dx.doi.org/10.1016/j.actbio.2023.01.058> [L.C. Shanley, O.R. Mahon, S.A. O'Rourke, N.G.B. Neto, M.G. Monaghan, D.J. Kelly, A. Dunne]
- Lyons, Michael, 'Voltammetric and mathematical analysis of adsorption of enzymes at the rotating disk electrode', *International Journal of Electrochemical Science*, 17 (2022), 220433 [R. Shanthi, T. Iswarya, J. Visuvasam, L. Rajendran, M.E.G. Lyons]
- 'Theoretical analysis of transient response of an amperometric sensor based on the phenol-polyphenol oxidase model', *International Journal of Electrochemical Science*, 17 (2022), 22047 [R.J. Salomi, S.V. Sylvia, M. Abukhaled, M.E.G. Lyons, L. Rajendran]
- 'Amperometric biosensors and coupled enzyme non linear reaction processes: a complete theoretical and numerical approach', *Electrochim Acta*, 415 (2022), 140236 [S.V. Sylvia, R.J. Salomi, L. Rajendran, M.E.G. Lyons]
- 'Theoretical analysis of reaction diffusion processes at biocatalyst modified electrodes: solutions derived via Akbari-Ganji method and Taylor's series with ancient Chinese algorithms', *International Journal of Electrochemical Science*, 17 (2022), 220560 [R. Umadevi, M Chitra Devi, K. Venuqopal, L. Rajendran, M.E.G. Lyons]
- 'Mathematical modelling of substrate consumption in a biofilm: solutions arrived using the Akbari-Ganji method', *International Journal of Electrochemical Science*, 17 (2022), 220569 [R. Vanaja, P. Jeyabarathi, L. Rajendran, M.E.G. Lyons]
- 'Mathematical modelling of forced convection in a porous medium of general geometry: Taylor series with Ying-Buzu algorithm', *International Journal of Electrochemical Science*, 17 (2022), 220623 [K.L. Naragayanam, M. Shanthi, R.U. Rani, M.E.G. Lyons, L. Rajendran]
- 'Mathematical analysis of electron transfer mediator/heterogeneous catalyst composites in polymer modified electrodes', *International Journal of Electrochemical Science*, 17 (2022), 220649 [S. Saravana Kumar, S. Padma, N. Mehala, A. Eswari, M.E.G. Lyons, B. Manimegali, L. Rajendran]
- 'Mathematical modelling of unsteady flow of gas in a semi-infinite porous medium', *International Journal of Electrochemical Science*, 7 (2022), 220619 [L.C. Mary, R. Saravanakumar, D. Lakshmanaraj, L. Rajendran, M.E.G. Lyons]
- 'Modelling the current response and sensitivity of oxidase enzyme electrodes monitored amperometrically by the consumption of oxygen', *Electrochem*, 3, 2 (2022), 309-321 [P. Pirabaharian, M. Chitra Devi, R. Swaminathan, L. Rajendran, M.E.G. Lyons]
- 'Application of Taylor's series with Ying Buzu Shu algorithm for non linear problems in amperometric biosensors', *International Journal of Electrochemical Science*, 17 (2022), <http://dx.doi.org/10.20964/2022.07.27> [B. Manimegalai, R. Swaminathan, M.E.G. Lyons, L. Rajendran]
- 'Modelling of bio-trickling filters for treatment of NOx concentration in both gas and bio-film phases', *Electrochem*, 3 (2022), 361-378 [R. Umadevi, P. Jeyabarathi, K. Venugopal, M.E.G. Lyons, L. Rajendran]
- 'Microbe-based sensor for long term detection of urine glucose', *Sensors*, 22 (2022), 5340 [D. Li, Y. Shi, Y. Sun (...), M.E.G. Lyons, L. Xiao]
- 'Steady state current of bioelectrocatalysis using Akbari-Ganji's method', *International Journal of Electrochemical Science*, 17 (2022), <http://dx.doi.org/10.20964/2022.09.37> [P. Jeyabarathi, L. Rajendran, M. Abukhaled, M.E.G. Lyons, M. Kannan]
- 'Modelling enzyme adsorption and surface enzyme reaction kinetics in biopolymer microarrays', *International Journal of Electrochemical Science*, 17 (2022), <http://dx.doi.org/10.20964/2022.09.79> [S. Salai Sivasundari, B. Manimegalai, L. Rajendran, M.E.G. Lyons]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Modelling of irreversible homogeneous reactions at planar diffusion layers', *Electrochem*, 3 (2022), 479-491 [S. Salai Sivasundari, R. Senthamarai, M. Chitra Devi, L. Rajendran, M.E.G. Lyons]
- 'Reaction and kinetics studies of immobilized enzyme systems: part II: with external mass transfer resistance', *International Journal of Electrochemical Science*, 17, 9 (2022), <http://dx.doi.org/10.20964/2022.10.43> [M. Sivakumar, R. Senthamarai, L. Rajendran, M.E.G. Lyons]
- 'Mathematical modelling of amperometric glucose biosensor based on immobilized enzymes: new approach of Taylor series method', *International Journal of Electrochemical Science*, 17 (2022), 221064 [K. Lakshmi Narayanan, J. Kavitha, R. Usha Rani, M.E.G. Lyons, L. Rajendran]
- 'Theoretical analysis of mass transfer behaviour in fixed bed electrochemical reactors: Akbari-Ganjli's method', *Electrochem*, 3 (2022), 699-712 [P. Jeyabarathi, L. Rajendran, M.E.G. Lyons, M. Abukhaled]
- 'Reaction and kinetic behaviours of immobilized enzyme systems: part I: without external mass transfer resistance', *International Journal of Electrochemical Science*, 17 (2022), 221159 [M. Sivakumar, R. Senthamarai, L. Rajendran, M.E.G. Lyons]
- 'Analytical expressions for steady state current and estimation of kinetic parameters in an amperometric biosensor with product inhibition: power series method', *AIP conf. proc, 2nd international conference on mathematical techniques and applications*, AIP (2022), 250017 [J. Saranya, R.U. Rani, M.E.G. Lyons, M. Abukhaled, L. Rajendran]
- 'A new method to study the nonlinear reaction-diffusion process in electroactive polymer films: using the hyperbolic function methods', *International Journal of Electrochemical Science*, 17 (2022), 221261 [S. Rekha, R. Usha Rani, L. Rajendran, M.E.G. Lyons]
- 'Modelling and simulation of microbial activity in stratified and homogeneous biofilms: hyperbolic function method', *International Journal of Electrochemical Science*, 17 (2022), 10.20964/2022.12.68 [J. Saranya, P. Jeyabarathi, L. Rajendran, M.E.G. Lyons]
- 'Modelling glucose isomerization in a packed-bed reactor: a complete theoretical and numerical approach', *International Journal of Electrochemical Science*, 18, 3 (2023), 100023 [M. Rajaram, U.M. Mariappan, J. Visuvasam, A. meena, L. Rajendran, M.E.G. Lyons]
- McGouran, Joanna**, 'Flipping the switch: innovations in inducible probes for protein profiling', *ACS Chemical Biology*, 16, 12 (2021), 2719-2730 [S.M. McKenna, E.M. Fay, J.F. McGouran]
- 'Synthesis and evaluation of squaramide and thiosquaramide inhibitors of the DNA repair enzyme SNM1A', *Bioorganic and Medicinal Chemistry*, 46, 116369 (2021), <http://dx.doi.org/10.1016/j.bmc.2021.116369> [M. Berney, W. Doherty, W.T. Jauslin, M.T. Manoj, J.F. McGouran]
- '5'-phosphorylation increases the efficacy of nucleoside inhibitors of the DNA repair enzyme SNM1A', *ChemMedChem*, 17, 5 (2022) [M. Berney, M.T. Manoj, E.M. Fay, J.F. McGouran]
- 'Investigating eosin Y as a photocatalyst for the radical-dependent activity-based probing of deubiquitinating enzymes', *Organic and Biomolecular Chemistry*, 19, 10 (2021), 2177-2181 [N.C. Taylor, J.F. McGouran]
- 'Probing the binding requirements of modified nucleosides with the DNA nuclease snm1a', *Molecules*, 26, 2 (2021), <http://dx.doi.org/10.3390/molecules26020320> [E.M. Durr, J.F. McGouran]
- Nicolosi, Valeria**, 'Additive manufacturing of Ti<sub>3</sub>C<sub>2</sub>-MXene-functionalized conductive polymer hydrogels for electromagnetic-interference shielding', *Advanced Materials* (2021), <http://dx.doi.org/10.1002/adma.202106253> [J. Liu, L. McKeon, J. Garcia (...), J.N. Coleman J.V. Nicolosi]
- 'Postsynthetic treatment of nickel-iron layered double hydroxides for the optimum catalysis of the oxygen evolution reaction', *NPJ 2D Materials and Applications*, 5, 1 (2021), <http://dx.doi.org/10.1038/s41699-021-00249-6> [D. Tyndall, S. Jaskaniec, B. Shortall (...), G.S. Duesberg, V. Nicolosi]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- '2D nanosheets from fool's gold by LPE: high performance lithium-ion battery anodes made from stone', *FlatChem*, 30, 100295 (2021), <http://hdl.handle.net/2262/98387> [H. Kaur, R. Tian, A. Roy, M. McCrystall, R. Smith, D.V. Horvath, V. Nicolosi, J.N. Coleman]
- 'Erratum: Production of quasi-2D platelets of nonlayered iron pyrite (FeS<sub>2</sub>) by liquid-phase exfoliation for high performance battery electrodes (ACS Nano (2020) 14:10 (13418-13432) DOI: 10.1021/acsnano.0c05292)', *ACS Nano*, 15, 5 (2021), 9196 [H. Kaur, R. Tian, A. Roy (...), V. Nicolosi, J.N. Coleman]
- 'Covalently interconnected transition metal dichalcogenide networks via defect engineering for high-performance electronic devices', *Nature Nanotechnology*, 16, 5 (2021), 592-598 [S. Ippolito, A.G. Kelly, R. Furlan de Oliveira (...), Z. Bian, L. Lombardi]
- 'Quantifying the effect of separator thickness on rate performance in lithium-ion batteries', *Journal of the Electrochemical Society*, 169, 3 (2022), <http://hdl.handle.net/2262/98389> [D.V. Horvath, R. Tian, C. Gabbett, V. Nicolosi, J.N. Coleman]
- 'Charged domain wall and polar vortex topologies in a room-temperature magnetoelectric multiferroic thin film', *ACS Applied Materials and Interfaces*, 14, 4 (2022), 5525-5536 [K. Moore, E.N. O'Connell, S.M. Griffin (...), V. Nicolosi *et al*]
- 'Growth and analysis of the tetragonal (ST12) germanium nanowires', *Nanoscale*, 14, 5 (2022), 2030-2040 [A. Garcia-Gil, S. Biswas, A. Roy (...), V. Nicolosi *et al*]
- 'One-step grown carbonaceous germanium nanowires and their application as highly efficient lithium-ion battery anodes', *ACS Applied Energy Materials*, 5, 2 (2022), 1922-1932 [A. Garcia, S. Biswas, D. McNulty (...), V. Nicolosi *et al*]
- 'Silver nanocolloid generation using dynamic laser ablation synthesis in solution system and drop-casting', *Nano-Structures and Nano-Objects*, 29, 100841 (2022), <http://dx.doi.org/10.1016/j.nanoso.2022.100841> [A. McCarthy, S.P. Sreenilayam, O. Ronan (...), V. Nicolosi, D. Brabazon]
- 'Solvent engineered synthesis of layered SnO for high-performance anodes', *NPJ 2D Materials and Applications*, 5, 1 (2021), <http://dx.doi.org/10.1038/s41699-021-00208-1> [S. Jaskaniec, S.R. Kavanagh, J. Coelho (...), D.O. Scanlon, V. Nicolosi]
- 'TEM and EELS characterization of Ni-Fe layered double hydroxide decompositions caused by electron beam irradiation', *NPJ 2D Materials and Applications*, 5, 1 (2021), <http://dx.doi.org/10.1038/s41699-021-00212-5> [C. Hobbs, C. Downing, S. Jaskaniec, V. Nicolosi]
- 'Temperature influence on Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> lines printed by aerosol jet printing', *Sensors and Actuators A: Physical*, 332, 113185 (2021), <http://dx.doi.org/10.1016/j.sna.2021.113185> [M. Borghetti, M. Serpelloni, E. Sardini, D. Spurling, V. Nicolosi]
- 'Charge transport mechanisms in inkjet-printed thin-film transistors based on two-dimensional materials', *Nature Electronics*, 4, 12 (2021), 893-905 [E. Piatti, A. Arbab, F. Galanti (...), V. Nicolosi *et al.*]
- 'Interfacial engineered vanadium oxide nanoheterostructures synchronizing high-energy and long-term potassium-ion storage', *ACS Nano*, 16, 1 (2022), 1502-1510 [X. Kuai, K. Li, J. Chen (...), V. Nicolosi, L. Gao]
- 'One-dimensional (1D) nanostructured materials for energy applications', *Materials*, 14, 10 (2021), <http://dx.doi.org/10.3390/ma14102609> [A. Machin, K. Fontanez, J.C. Arango (...), V. Nicolosi *et al.*]
- 'Inclusion of 2D transition metal dichalcogenides in perovskite inks and their influence on solar cell performance', *Nanomaterials*, 11, 7 (2021), <http://dx.doi.org/10.3390/nano11071706> [N. Taurisano, G. Bravetti, S. Carallo (...), V. Nicolosi *et al.*]
- 'Extending the cyclability of alkaline zinc-air batteries: synergistic roles of Li<sup>+</sup> and K<sup>+</sup> ions in electrocatalysis', *ACS Applied Materials and Interfaces*, 13, 28 (2021), 33112-33122 [P. Thakur, K. Alam, A. Roy, C. Downing, V. Nicolosi, P. Sen, T.N. Narayanan]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'MXene materials based printed flexible devices for healthcare, biomedical and energy storage applications', *Materials Today*, 43 (2021), 99-131 [S.P. Sreenilayam, I. Ul Ahad, V. Nicolosi, D. Brabazon]
- 'Multifunctional  $Ti_3C_2T_x$  MXene composite hydrogels with strain sensitivity toward absorption-dominated electromagnetic-interference shielding', *ACS Nano*, 15, 1 (2021), 1465-1474 [Y. Zhu, J. Liu, T. Guo, J.J. Wang, X. Tang, V. Nicolosi]
- Nolan, Hugo, 'MoS<sub>2</sub>/carbon heterostructured catalysts for the hydrogen evolution reaction: N-doping modulation of substrate effects in acid and alkaline electrolytes', *CARBON*, 202, Part 2 (2023), 70-80 [H. Nolan]
- O'Brien, John, 'Application of 2D EXSY and qNMR spectroscopy for diastereomeric excess determination following chiral resolution of beta-lactams', *Chemistry Open* (2022), e202200119 [E.C. McLoughlin, J.E. O'Brien, C. Trujillo, M.J. Meegan, N.M. O'Boyle]
- Rozas, Isabel, 'Allantodapson is a pan-inhibitor of *Staphylococcus aureus* adhesion to fibrinogen, loricrin and cytokeratin 10', *Microbiology Spectrum*, 10 (2022), e0117521 [F. Prencipe, A. Alsibae, Z. Khaddem (...), I. Rozas, M.P. Brennan]
- 'Aiming to improve binding of porphyrin diphenyl guanidinium conjugates to guanine-quadruplexes: when size matters', *Bioorganic and Medicinal Chemistry Letters*, 75 (2022), 128954- [N. Stipanicev, K. Raabe, I. Rozas]
- Scanlan, Eoin, 'Radical-mediated thiol-ene 'click' reactions in deep eutectic solvents for bioconjugation', *Green Chemistry*, 24, 4 (2022), 1456-1462 [M.D. Nolan, A. Mezzetta, L. Guazzelli, E.M. Scanlan]
- 'Real-time multi-photon tracking and bioimaging of glycosylated theranostic prodrugs upon specific enzyme triggered release', *Chemistry - A European Journal*, 28, 3 (2022), <http://dx.doi.org/10.1002/chem.202103858> [R.B.P. Elmes, D.C. Williams, T. Gunnlaugsson, E.M. Scanlan]
- 'Radical-mediated approaches for the synthesis of thiolactones', *European Journal of Organic Chemistry*, 2021, 37 (2021), 5320-5334 [R.O. McCourt, E.M. Scanlan]
- 'Structural basis of the membrane intramolecular transacylase reaction responsible for lyso-form lipoprotein synthesis', *Nature Communications*, 12, 1 (2021), <http://dx.doi.org/10.1038/s41467-021-24475-0> [S. Olatunji, K. Bowen, C-Y. Huang (...), E.M. Scanlan *et al.*]
- 'Synthetic strategies for FRET-enabled carbohydrate active enzyme probes', *Methods in Molecular Biology*, 2370 (2022), 237-264 [M. Singh, M. Watkinson, E.M. Scanlan, G.J. Miller]
- 'Cysteiny radicals in chemical synthesis and in nature', *Chemical Society Reviews*, 50, 19 (2021), 10857-10894 [J.T. McLean, A. Benny, M.D. G. Swinand, E.M. Scanlan]
- 'Aggregation of protein therapeutics enhances their immunogenicity: causes and mitigation strategies', *RSC Chemical Biology*, 2, 4 (2021), 1004-1020 [M.L.E. Lundahl, S. Fogli, P.E. Colavita, E.M. Scanlan]
- 'Controlling the carbon-bio interface via glycan functional adlayers for applications in microbial fuel cell bioanodes', *Molecules*, 26, 16 (2021), <http://dx.doi.org/10.3390/molecules26164755> [A. Iannaci, A. Myles, T. Philippon, P.E. Colavita]
- 'Radical-mediated acyl thiol-ene reaction for rapid synthesis of biomolecular thioester derivatives', *European Journal of Organic Chemistry*, 2021, 29 (2021), 4148-4160 [J.T. McLean, P. Milbeo, D.M. Lynch, L. McSweeney, E.M. Scanlan]
- 'Macrophage innate training induced by IL-4 and IL-13 activation enhances OXPPOS driven anti-mycobacterial responses', *eLife*, 11, e74690 (2022), <http://dx.doi.org/10.7554/eLife.74690> [M.L.E. Lundahl, M. Mitermite, D.G. Ryan, S. Case, S.V. Gordon, E.C. Lavelle]
- 'Glycosidase activated prodrugs for targeted cancer therapy', *Chemical Society Reviews*, 51, 23 (2022), 9694-9716 [H. Martin, L.R. Lazaro, T. Gunnlaugsson, E.M. Scanlan]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Thioether analogues of the pituitary neuropeptide oxytocin via thiol-ene macrocyclisation of unprotected peptides', *Organic and Biomolecular Chemistry*, 20, 42 (2022), 8192-8196 [M.D. Nolan, C. Shine, E.M. Scanlan, R. Petracca]
- Schmitt, Wolfgang**, 'Highlights of the development and application of luminescent lanthanide based coordination polymers, MOFs and functional nanomaterials', *Dalton Transactions*, 50, 3 (2021), 770-784 [T. Gorai, W. Schmitt, T. Gunnlaugsson]
- 'A photostable 1D ruthenium-zinc coordination polymer as a multimetallic building block for light harvesting systems', *ChemPhotoChem* (2022), <http://dx.doi.org/10.1002/cptc.202100299> [S. Hennessey, C.S. Burke, R. Gonzalez-Gomez, D. Sensharma, W. Tong, A.C. Kathalikkattil]
- 'Tuning the catalytic water oxidation activity through structural modifications of high-nuclearity mn-oxo clusters [mn18m] (M = sr2+, mn2+)', *Water (Switzerland)*, 13, 15 (2021), <http://hdl.handle.net/2262/99587> [J. Soriano-Lopez, R. Elliott, A.C. Kathalikkattil, A.M. Ako, W. Schmitt]
- '4D printing of MXene hydrogels for high-efficiency pseudocapacitive energy storage', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-022-34583-0> [K. Li, J. Zhao, A. Zhussupbekova (...), W. Schmitt *et al.*]
- 'Additive manufacturing of Li-ion batteries: a comparative study between electrode fabrication processes', *Advanced Energy Materials* (2023), <http://dx.doi.org/10.1002/aenm.202203747> [S. Pinilla, S. Ryan, L. McKeon (...), W. Schmitt *et al.*]
- Senge, Mathias**, 'Photosensitizer-hyaluronic acid complexes for antimicrobial photodynamic therapy (aPDT)', *Journal of Porphyrins and Phthalocyanines*, 26, 8 (2022), 585-593 [B. Khurana, T-S. Ouk, R. Lucas, M.O. Senge, V. Sol]
- 'Understanding structure-properties relationships of porphyrin linked to graphene oxide through  $\pi$ - $\pi$ -stacking or covalent amide bonds', *Scientific Reports*, 12, 1 (2022), <http://dx.doi.org/10.1038/s41598-022-16931-8> [A. Lewandowska-Andralojc, E. Gacka, T. Pedzinski (...), M.O. Senge *et al.*]
- 'Nonplanar porphyrins: synthesis, properties, and unique functionalities', *Chemical Society Reviews*, 51, 17 (2022), 7560-7630 [T. Ishizuka, N. Grover, C.J. Kingsbury, H. Kotani, M.O. Senge, T. Kojima]
- 'Trimethoxyphenyl-BODIPYs as probes for lysosome staining', *Journal of Porphyrins and Phthalocyanines*, 26, 8 (2022), 573-584 [P. Gierlich, L. Rodrigues, F.A. Schaberle, S. Callaghan, L.C. Gomes-Da-Silva, M.O. Senge]
- 'POLYTHEA - the opportunities and challenges of doctoral training networks', *Journal of Porphyrins and Phthalocyanines*, 26, 8 (2022), 527-532 [C. Donohoe, S. Leroy-Lhez, M.O. Senge, L.C. Gomes Da Silva]
- 'Importance of molecular symmetry for enantiomeric excess recognition by NMR', *Chemical Communications*, 58, 35 (2022), 5423-5426 [K. Norvaiša, J.E. O'Brien, I. Osadchuk, B. Twamley, V. Borovkov, M.O. Senge]
- 'Fundamental electronic changes upon intersystem crossing in large aromatic photosensitizers: free base 5,10,15,20-tetrakis(4-carboxylatophenyl)porphyrin', *Physical Chemistry Chemical Physics*, 24, 12 (2022), 7505-7511 [R. Buchner, V. Vaz da Cruz, N. Grover (...), M.O. Senge, A. Föhlich]
- 'Strapped porphyrins as model systems for atropisomeric photosensitizer drugs', *European Journal of Organic Chemistry* (2023), <http://dx.doi.org/10.1002/ejoc.202201453> [C. Donohoe, A. Charisiadis, S. Maguire, B. Twamley, F.A. Schaberle, L.C. Gomes-da-Silva, M.O. Senge]
- 'Facile synthesis of porphyrin-conjugates as amphiphilic modified photosensitizer structures of m -THPP bearing carbamate, carboxylate and sulfonate linkers', *Journal of Porphyrins and Phthalocyanines*, 26, 10 (2022), 638-647 [Y.M. Shaker, M.A. Omar, N. Grover, M.O. Senge]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Metal coordination effects on the photophysics of dipyrinato photosensitizers', *Molecules*, 27, 20 (2022), <http://dx.doi.org/10.3390/molecules27206967> [P.C.P. Teeuwen, Z. Melissari, M.O. Senge, R.M. Williams]
- 'Self-organization of porphyrin-POM dyads: nonplanar diacids and oxoanions in low-dimensional H-bonding networks', *Molecules*, 27, 20 (2022), <http://dx.doi.org/10.3390/molecules27207060> [C.J. Kingsbury, M. Kielmann, B. Twamley, M.O. Senge]
- 'The photosensitizer temoporfin (mTHPC)-chemical, pre-clinical and clinical developments in the last decade', *Photochemistry and Photobiology* (2022), <http://dx.doi.org/10.1111/php.13730> [A. Wiehe, M.O. Senge]
- Trujillo, Cristina*, 'Application of 2D EXSY and qNMR Spectroscopy for diastereomeric excess determination following chiral resolution of beta-lactams', *Chemistry Open* (2022), e202200119 [E.C. McLoughlin, J.E. O'Brien, C. Trujillo, M.J. Meegan, N.M. O'Boyle]

## School of Computer Science and Statistics

### COMPUTER SCIENCE

- Arnedillo-Sanchez, Inmaculada*, 'Unhealthy gestational weight gain: are we neglecting inadequate gestational weight gain?', *Midwifery*, 107 (2022), 103277 [S. Arnedillo-Sánchez, R. Rubén Morilla-Romero de la Osa, I. Arnedillo-Sánchez]
- Butterfield, Andrew*, 'From CCS to CSP: the m-among-n synchronisation approach', *Electronic proceedings in theoretical computer science, combined 29th international workshop on expressiveness in concurrency and 19th workshop on structural operational semantics*, eds V. Castiglioni, C. Antares, Warsaw, Poland, Open Publishing Association (2022), 60-74 [G.E. Ngondi, V. Koutavas, A. Butterfield]
- Clarke, Siobhan*, 'Dynamic service placement in multi-access edge computing: a systematic literature review', *IEEE Access*, 10 (2022), 32639-32688 [H. Tabatabaee Malazi, S.R. Chaudhry, A. Kazmi, A. Palade, C. Cabrera, G. White, S. Clarke]
- 'Interoperable internet of things for smart transportation systems in circular cities', *Computer*, 55, 12 (2022), 86-97 [A. Kazmi, S.R. Chaudhry, H.T. Malazi, S. Dhara, S. Clarke]
- 'UrbanEnQoSPlace: a deep reinforcement learning model for service placement of real-time smart city IoT applications', *IEEE Transactions on Services Computing* (2022), 1-16 [M. Bansal, I. Chana, S. Clarke]
- Di Liberto, Giovanni*, 'Accurate decoding of imagined and heard melodies', *Frontiers in Neuroscience*, 15 (2021), <http://dx.doi.org/10.3389/fnins.2021.673401> [G. Di Liberto]
- Dingliana, John*, 'Perceptually enhanced shadows for OST AR', *Proceedings of the 14th international workshop on immersive mixed and virtual environment systems*, Athlone, Ireland, ACM (2022), 30-36 [C.W. Ooi, J. Dingliana]
- Doherty, Gavin*, 'Investigating clutching interactions for touchless medical imaging systems', *Proceedings of ACM CHI conference on human factors in computing systems (CHI '22)*, New Orleans, ACM, New York (2022), <https://dl.acm.org/doi/10.1145/3491102.3517512> [S. Cronin, E. Freeman, G. Doherty]
- 'Digital interventions to enhance readiness for psychological therapy: a scoping review', *Journal of Medical Internet Research*, 24, 8 (2022), <https://doi.org/10.2196/37851> [J. Jardine, R. Bowman, G. Doherty]
- 'Understanding users' perspectives on mobile apps for anxiety management', *Frontiers in Digital Health*, 4 (2022), <https://doi.org/10.3389/fdgth.2022.854263> [A. Balaskas, S.M. Schueller, A.L. Cox, G. Doherty]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Designing human-centered AI for mental health: developing clinically relevant applications for online CBT treatment', *ACM Transactions on Human-Computer Interaction*, 30, 2 (2023), <https://doi.org/10.1145/3564752> [A. Thieme, M. Hanratty, M. Lyons, J. Palacios, R. Marques, C. Morrison, G. Doherty]
- 'Privacy and security in digital therapeutics', *Digital therapeutics for mental health and addiction*, Jacobson, eds N. Jacobson, T. Kowatsch, L. Marsch, Elsevier (2022), <https://doi.org/10.1016/B978-0-323-90045-4.00002-2> [L. Nurgalieva, G. Doherty]
- 'SilverCloud health: online mental health and wellbeing platform', *Digital therapeutics: strategic, scientific, developmental, and regulatory aspects*, eds O. Sverdllov, J. van Dam, London, Chapman and Hall (2022), <https://doi.org/10.1201/9781003017288> [D. Richards, A. Enrique, J. Palacios (...), G. Doherty *et al.*]
- 'Beyond subservience: using joint commitment to enable proactive CUIs for mood logging', *Conversational User Interfaces* (2022), <https://doi.org/10.1145/3543829.3544512> [R. Bowman, B. Cowan, A. Thieme, G. Doherty]
- 'Pervasive therapy: designing conversation-based interfaces for ecological momentary intervention', *IEEE Pervasive Computing* (2022), <http://dx.doi.org/10.1109/MPRV.2022.3209068> [R. Bowman, O. Cooney, A. Thieme, B. Cowan, G. Doherty]
- IEEE pervasive*, eds G. Doherty, M. Musolesi, A. Sano, T. Vaessen, 2 (2022), <https://doi.org/10.1109/MPRV.2022.3173828>
- 'Examining young adults daily perspectives on usage of anxiety apps: a user study', *PLOS Digital Health* (2023) [A. Balaskas, S.M. Schueller, A.L. Cox, C. Rashleigh, G. Doherty]
- 'Perceived fairness concerns within pandemic response technology', *Interacting with Computers* (2022), <https://doi.org/10.1093/iwc/iwac040> [S. Ryan, L. Nurgalieva, G. Doherty]
- 'Integrating fairness in the software design process: an interview study with HCI and ML experts', *IEEE Access* (2023) [S. Ryan, C. Nadal, G. Doherty]
- Dusparic, Ivana**, 'Optimizing energy efficiency in uav-assisted networks using deep reinforcement learning', *IEEE Wireless Communications Letters*, 11, 8 (2022), 1590-1594 [B. Omoniwa, B. Galkin, I. Dusparic]
- 'Guidelines for artifacts to support industry-relevant research on self-adaptation', *ACM SIGSOFT Software Engineering Notes*, 47, 4 (2022), 18-24 [D. Weyns, I. Gerostathopoulos, B. Buhnova, Barbora, N. Cardozo]
- 'Timely and sustainable: utilising correlation in status updates of battery-powered and energy-harvesting sensors using deep reinforcement learning', *Computer Communications*, 192(2022), 223-233 [J. Hribar, L.A. DaSilva, S. Zhou, Z. Jiang, I. Dusparic]
- 'Next generation context-oriented programming: embracing dynamic generation of adaptations', *Journal of Object Technology*, 21, 2 (2022), 1-6 [N. Cardozo, I. Dusparic]
- Ekembe Ngondi, Gerard**, 'From CCS to CSP: the m-among-n synchronisation approach', *Electronic proceedings in theoretical computer science, combined 29th international workshop on expressiveness in concurrency and 19th workshop on structural operational semantics*, eds V. Castiglioni, C. Antares, Warsaw, Poland, Open Publishing Association (2022), 60-74 [G.E. Ngondi, V. Koutavas, A. Butterfield]
- Fernando, Rafael**, 'Action signatures and finite-state variations', *Annotation, recognition and evaluation of actions II*, Galway (2022), 9 [T. Fernando]
- 'Strings from neurons to language', *Natural logic meets machine learning III*, Galway (2022), 10 [T. Fernando]
- Graham, Yvette**, 'Extending the scope of out-of-domain: examining QA models in multiple subdomains', *Proceedings of the third workshop on insights from negative results in NLP*, Dublin, Ireland, Association for Computational Linguistics (2022), 24-37 [C. Lyu, J. Foster, Y. Graham]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Evaluation of automatically generated video captions using vision and language models', *Proceedings of the 2022 IEEE International Conference on Image Processing (ICIP)*, Bordeaux, France, IEEE (2022), 2416-2420 [L. Lebron, Y. Graham, N.E. O'Connor, K. McGuinness]
- Haahr, Mads**, 'Beyond free will: understanding approaches to agency and their suitability for Bandersnatch-like titles', *Entertainment Computing (Elsevier)*, 43, 100500 (2022), 1-11 [A. Rezk, M. Haahr]
- 'A lens to the past: using site-specific augmented reality for historical interpretation', *Lecture notes in computer science, joint conference on serious games*, eds H. Söbke, P. Spangenberg, P. Müller, S. Göbel, Weimar, Germany, Springer (2022), 259-265 [M. Haahr, P.H. Wiil]
- 'Psychogeography with Jack B. Yeats art sounding gallery: augmented reality locative experience for blind people', *Proceedings of the 13th International Conference on Applied Human Factors and Ergonomics (AHFE 2022)*, ed M. Zallio, New York, USA, AHFE (2022) International Conference (2022), <http://hdl.handle.net/2262/101305> [S. Rudenko, M. Haahr]
- 'Jack B. Yeats AR and other art music', National Concert Hall, Ireland, (2022) [S. Rudenko, M. McDonnell, M. Haahr]
- 'Who am I that acts? The use of voice in virtual reality narratives', *Lecture notes in computer science, International Conference for Interactive Digital Storytelling (ICIDS)*, eds A. Mitchell, M. Vosmeer, Tallinn, Estonia, Springer (2021), 3-12 [J. Barbara, M. Haahr]
- 'Virtual reality interactive narratives in transmedia cultural heritage experiences', *International conference of Terra Mosana: sustainable digital heritage*, Maastricht University, Netherlands (2021), <http://hdl.handle.net/2262/101319> [J. Barbara, M. Haahr]
- 'The complexity of uncertainty: towards interactive digital narratives of prehistoric intangible cultural heritage', *Zip-scene, zip-scene*, eds A. Bakk, Moholy-Nagy University of Art and Design, Budapest, Hungary (2021), <http://hdl.handle.net/2262/101318> [J. Barbara, H. Koenitz, M. Haahr]
- Hederman, Lucy**, 'Towards a rare disease registry standard: semantic mapping of common data elements between FAIRVASC and the European joint programme for rare disease', *5th Workshop on Semantic Web solutions for large-scale biomedical data analytics (SeWeBMeDA-2022), Extended Semantic Web Conference (ESWC)*, eds A. Hashnain, T. Robson, M. Dumontier, B. Kirby, D. Rebholz-Schuhmann, Hersonissos, Greece (2022), 1-11 [Y. Beyza, K. McGlenn, L. Hederman, D. O'Sullivan, M.A. Little]
- 'Theoretical perspectives towards culture-centered user engagement design for mobile health in the global south', *Proceedings of the Future Technologies Conference (FTC) 2022*, 3 (2023), 295-311 [T. Ikwunne, L. Hederman, P.J. Wall]
- 'Design processes for user engagement with mobile health: a systematic review', *International Journal of Advanced Computer Science and Applications*, 13, 2 (2022), 291-303 [T. Ikwunne, L. Hederman, P.J. Wall]
- 'Towards exchanging wearable-PGHD with EHRs: developing a standardized information model for wearable-based patient generated health data', *IARIA* (2022), <http://dx.doi.org/10.21427/RFHM-5177> [A. Abubakar Kawu, D. O'Sullivan, L. Hederman]
- 'The DECENT toolkit to support design of user engagement of mobile health technologies from a practice theory perspective', *Co-creating for Context in the Transfer and Diffusion of IT: IFIP WG 8.6 International working conference on transfer and diffusion of IT, TDIT 2022*, Maynooth Ireland (2022), 94-104 [T. Ikwunne, L. Hederman, P.J. Wall]
- Iosifidis, Georgios**, 'AutoML for video analytics with edge computing', *INFOCOM, IEEE* (2021), <http://dx.doi.org/10.1109/infocom42981.2021.9488704> [A. Galanopoulos, J.A. Ayala-Romero, D.J. Leith, G. Iosifidis]
- 'Migration-aware network services with edge computing', *IEEE Transactions on Network and Service Management* (2021), 1-14 [A. Mukhopadhyay, G. Iosifidis, M. Ruffini]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Learning-based reservation of virtualized network resources', *IEEE Transactions on Network and Service Management* (2022), <http://dx.doi.org/10.1109/TNSM.2022.3144774> [J. Monteil, G. Iosifidis, L. Da Silva]
- 'Birkhoff's decomposition revisited: sparse scheduling for high-speed circuit switches', *IEEE/ACM Transactions on Networking*, 29, 6 (2021), 2399-2412 [V. Valls, G. Iosifidis, L. Tassiulas]
- 'An optimal deployment framework for multi-cloud virtualized radio access networks', *IEEE Transactions on Wireless Communications*, 20, 4 (2021), 2251-2265 [F.W. Murti, J.A. Ayala-Romero, A. Garcia-Saavedra, X. Costa-Perez, G. Iosifidis]
- 'Orchestrating energy-efficient vRANs: Bayesian learning and experimental results', *IEEE Transactions on Mobile Computing* (2021), <http://dx.doi.org/10.1109/TMC.2021.3123794> [J.A. Ayala-Romero, A. Garcia-Saavedra, X. Costa-Perez, G. Iosifidis]
- 'Resource sharing in public cloud system with evolutionary multi-agent artificial swarm intelligence', *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 12632 LNCS(2021), 240-251 [B. Chen, Y. Zhang, G. Iosifidis]
- 'Selective edge computing for mobile analytics', *IEEE Transactions on Network and Service Management* (2022), 1-1 [A. Galanopoulos, G. Iosifidis, T. Salonidis, D.J. Leith]
- 'Quid pro quo in streaming services: algorithms for cooperative recommendations', *IEEE Transactions on Mobile Computing* (2023), 1-14 [D. Tsigkari, G. Iosifidis, T. Spyropoulos]
- 'Lazy lagrangians for optimistic learning with budget constraints', *IEEE/ACM Transactions on Networking* (2023), 1-15 [D. Anderson, G. Iosifidis, D.J. Leith]
- 'Optimistic no-regret algorithms for discrete caching', *Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 6, 3 (2022), <http://dx.doi.org/10.1145/3570608> [N. Mhaisen, A. Sinha, G. Paschos, G. Iosifidis]
- 'Enabling long-term fairness in dynamic resource allocation', *Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 6, 3 (2022), <http://dx.doi.org/10.1145/3570606> [T. Si Salem, G. Iosifidis, G. Neglia]
- Koutavas, Vasileios**, 'From bounded checking to verification of equivalence via symbolic up-to techniques', *LNCS, 28th international conference on tools and algorithms for the construction and analysis of systems (ETAPS 2020)*, Munich, Germany, Springer (2022), 178-195 [V. Koutavas, Y-Y. Lin, N. Tzevelekos]
- 'From CCS to CSP: the m-among-n synchronisation approach', *Electronic proceedings in theoretical computer science, combined 29th international workshop on expressiveness in concurrency and 19th workshop on structural operational semantics*, eds V. Castiglioni, C. Antares, Warsaw, Poland, Open Publishing Association (2022), 60-74 [G.E. Ngondi, V. Koutavas, A. Butterfield]
- Koutsombogera, Maria**, 'Mutual gaze and linguistic repetition in a multimodal corpus', *Proceedings of the language resources and evaluation conference*, Marseille, France, European language resources association (2022), 2771-2780 [A. Murat, M. Koutsombogera, C. Vogel]
- 'Understanding laughter in dialog', *Cognitive Computation*, 14 (2022), 1405-1420 [M. Koutsombogera, C. Vogel]
- 'Gesture and part-of-speech alignment in dialogue', *Proceedings of the 26th workshop on the semantics and pragmatics of dialogue*, eds E. Gregoromichelaki, J. Hough, J.D. Kelleher (2022), 172-182 [Z. Khosrobeigi, M. Koutsombogera, C. Vogel]
- Leith, Douglas**, 'Selective edge computing for mobile analytics', *IEEE Transactions on Network and Service Management* (2022), 1-1 [A. Galanopoulos, G. Iosifidis, T. Salonidis, D.J. Leith]
- 'Lazy lagrangians for optimistic learning with budget constraints', *IEEE/ACM Transactions on Networking* (2023), 1-15 [A. Anderson, G. Iosifidis, D.J. Leith]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'On the data privacy practices of Android OEMs', *PLoS ONE*, 18, 1 (2023), e0279942 [H. Liu, P. Patras, D.J. Leith]
- Lewis, David**, 'A design pattern describing use of personal data in privacy policies', *Advances in pattern-based ontology engineering*, eds E. Blomqvist, T. Hahmann, K. Hammar, P. Hitzler, L. Zhou, London, IOS Press (2021), 107-119 [H.J. Pandit, D. O'Sullivan, D. Lewis]
- 'An argument for generating SHACL shapes from ODPs', *Advances in pattern-based ontology engineering*, eds E. Blomqvist, T. Hahmann, K. Hammar, P. Hitzler, L. Zhou, London, IOS Press (2021), 134-141 [H.J. Pandit, D. O'Sullivan, D. Lewis]
- 'Data collection in the global south and other resource-constrained environments: practical, methodological and ethical challenges', *IFIP Advances in Information and Communication Technology*, 657 IFIP (2022), 608-618 [S. Brown, D. Saxena, P.J. Wall, C. Roche, F. Hussain, D. Lewis]
- McCarthy, Daniel**, 'Sulpicius Severus's construction of his 84-year Paschal table', *Peritia - Journal of the Medieval Academy of Ireland*, 33 (2022), 139-158 [D. Mc Carthy]
- McDonnell, Rachel**, 'Sympathy for the digital: influence of synthetic voice on affinity, social presence and empathy for photorealistic virtual humans', *Computers and Graphics*, 104 (2022), 116-128 [D. Higgins, K. Zibrek, J.P. Cabral, D. Egan, R. McDonnell]
- 'A survey on the application of virtual reality in event-related potential research', *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 13480 LNCS (2022), 256-269 [V. Marochko, R. Reilly, R. McDonnell, L. Longo]
- 'Smiling in the face and voice of avatars and robots: evidence for a smiling McGurk effect', *IEEE Transactions on Affective Computing* (2022), 1-12 [I. Torre, S. Holk, E. Yadollahi, I. Leite, R. McDonnell, N. Harte]
- 'A preliminary investigation of avatar use in video-conferencing', *2021 IEEE Conference on Virtual Reality and 3D user interfaces abstracts and Workshops (VRW)*, Portugal (2021), 540-541 [D. Higgins, R. McDonnell]
- 'Model for predicting perception of facial action unit activation using virtual humans [formula presented]', *Computers and Graphics (Pergamon)*, 100 (2021), 81-92 [R. McDonnell, K. Zibrek, E. Carrigan, R. Dahyot]
- '3D face-model reconstruction from a single image: a feature aggregation approach using hierarchical transformer with weak supervision', *Neural Networks*, 156 (2022), 108-122 [S. Basak, P. Corcoran, R. McDonnell, M. Schukat]
- 'Pose-aware speech driven facial landmark animation pipeline for automated dubbing', *IEEE Access*, 10 (2022), 133357-133369 [D. Bigioi, H. Jordan, R. Jain, R. McDonnell, P. Corcoran]
- 'Smiling in the face and voice of avatars and robots: evidence for a 'smiling McGurk effect'', *IEEE Transactions on Affective Computing* (2022), 1-12 [I. Torre, S. Holk, E. Yadollahi, I. Leite, R. McDonnell, N. Harte]
- Moreau, Erwan**, 'CLG authorship analytics: a library for authorship verification', *International Journal of Digital Humanities* (2022), <http://hdl.handle.net/2262/101337> [E. Moreau, C. Vogel]
- O'Hare, Gregory**, 'STARE: augmented reality data visualization for explainable decision support in smart environments', *IEEE Access*, 10 (2022), 29543-29557 [M. Zheng, X. Pan, N. Velasco Bermeo, R.J. Thomas, D. Coyle, G.M.P. O'Hare, A.G. Campbell]
- 'Automated zone identification for variable-rate services in precision agriculture', *IEEE Access*, 9 (2021), 163242-163252 [J. Xu, N. Velasco Bermeo, M. Zheng, M. O'Grady, D. Langton, G.M.P. O'Hare]
- 'Cloud-assisted mobile crowd sensing for route and congestion monitoring', *IEEE Access*, 9 (2021), 157984-157996 [O. Yilmaz, L. Gorgu, M.J. O'Grady, G.M.P. O'Hare]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- O'Sullivan, Carol, 'State of the art in telepresence', *ACM SIGGRAPH 2022 Courses* (2022), <http://dx.doi.org/10.1145/3532720.3535673> [C. O'Sullivan]
- 'Augmented/mixed reality technologies for food: a review', *Trends in Food Science and Technology*, 124 (2022), 182-194 [C. O'Sullivan]
- 'FauxThrow: exploring the effects of incorrect point of release in throwing motions', *ACM Symposium on Applied Perception 2022* (2022), <http://dx.doi.org/10.1145/3548814.3551461> [G. Yamac, C. O'Sullivan]
- O'Sullivan, Declan, 'A design pattern describing use of personal data in privacy policies', *Advances in pattern-based ontology engineering*, eds E. Blomqvist, T. Hahmann, K. Hammar, P. Hitzler, L. Zhou, London, IOS Press (2021), 107-119 [H.J. Pandit, D. O'Sullivan, D. Lewis]
- 'An argument for generating SHACL shapes from ODPs', *Advances in pattern-based ontology engineering*, eds E. Blomqvist, T. Hahmann, K. Hammar, P. Hitzler, L. Zhou, London, IOS Press (2021), 134-141 [H.J. Pandit, D. O'Sullivan, D. Lewis]
- 'An ontology model for climatic data analysis', *41st IEEE Geoscience and Remote Sensing Symposium (IGARSS)*, virtual, IEEE (2021), 5739-5742 [J. Wu, F. Orlandi, D. O'Sullivan, S. Dev]
- 'Automated climate analyses using knowledge graph' *IEEE AP-S symposium on antennas and propagation and USNC-URSI radio science meeting*, Singapore/Virtual, IEEE (2021), 106-107 [J. Wu, H. Chen, F. Orlandi, Y. Hui Lee, D. O'Sullivan, S. Dev]
- 'An interoperable open data portal for climate analysis', *IEEE AP-S symposium on antennas and propagation and USNC-URSI radio science meeting*, Singapore/Virtual, IEEE (2021), 110-111 [J. Wu, H. Chen, F. Orlandi, Y. Hui Lee, D. O'Sullivan, S. Dev]
- 'FAIRVASC: a semantic web approach to rare disease registry integration', *Computers in Biology and Medicine* (2022), 1-31 [K. McGlinn, M.A. Rutherford, K. Gisslander, L. Hederman, M.A. Little, D. O'Sullivan]
- 'Detecting rainfall events leveraging climate knowledge graphs', *IEEE Photonics and Electromagnetics Research Symposium (PIERS)*, Hangzhou, China, IEEE (2021), 2336-2341 [J. Wu, F. Orlandi, D. O'Sullivan, S. Dev]
- 'Organizing decentralized energy data using semantic approach', *IEEE Photonics and Electromagnetics Research Symposium (PIERS)*, Hangzhou, China (2021), 2213-2216 [J. Wu, F. Orlandi, Y. Hui Lee, D. O'Sullivan, S. Dev]
- 'De-icing federated SPARQL pipelines: a method for assessing the 'freshness' of result sets', *MEPDAW 2021-7th workshop on managing the evolution and preservation of the data web, co-located ISWC 2021*, Virtual Event, United States (2021), 10-15 [D. Graux, F. Orlandi, D. O'Sullivan]
- 'Boosting climate analysis with semantically uplifted knowledge graphs', *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 15 (2022), 4708-4718 [J. Wu, F. Orlandi, D. O'Sullivan, E. Pisoni, S. Dev]
- 'RKD and UKIVAS groups. The association between ambient UVB dose and ANCA-associated vasculitis relapse and onset', *Arthritis Research and Therapy*, 24, 147 (2022), 1-20 [J. Scott, E. Havyarimana, A. Navarro-Gallinad (...), D. O'Sullivan et al.]
- 'Eliciting and confirming data, information, knowledge and wisdom in a specialist health care setting - the wicked method', *ICHIHIM 2022: International Conference on Health Informatics and Health Information Management*, Riga, Latvia, *International Journal of Medical and Health Sciences* (2022), 10-20 [S. Impey, D. Berry, S. Furtado (...), D. O'Sullivan, G. Stephens]
- 'A semantic web approach to uplift decentralized household energy data', *Sustainable Energy, Grids and Networks*, 32, 100891 (2022), 1-25 [J. Wu, F. Orlandi, T. AISkaif, D. O'Sullivan, S. Dev]
- 'Link climate: an interoperable knowledge graph platform for climate data', *Computers and Geosciences* (2022), 104-105 [J. Wu, F. Orlandi, D. O'Sullivan, S. Dev]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Structural characteristics of knowledge graphs determine the quality of knowledge graph embeddings across model and hyperparameter choices', *5th Workshop on Semantic Web solutions for large-scale biomedical data analytics (SeWeBMeDA-2022)*, Hersonissos Greece (2022), 11 [J. Sardina, D. O'Sullivan]
- 'Applying a mapping quality framework in cloud native monitoring', *18th international conference on semantic systems, SEMPDW 2022*, Vienna, Austria, CEUR-WS (2022), 5-10 [A. Randles, J. Keeney, L. Fallon, D. O'Sullivan]
- 'Evaluating the usability of a semantic environmental health data framework: approach and study', *Semantic Web Journal* (2022), <http://hdl.handle.net/2262/101517> [A. Navarro-Gallinad, F. Orlandi, J. Scott, M. Little, D. O'Sullivan]
- 'Towards a rare disease registry standard: semantic mapping of common data elements between FAIRVASC and the European joint programme for rare disease', *5th Workshop on Semantic Web solutions for large-scale biomedical data analytics (SeWeBMeDA-2022), Extended Semantic Web Conference (ESWC)*, eds A. Hasnain, T. Robson, M. Dumontier, B. Kirby, D. Rebholz-Schuhmann, Hersonissos, Greece (2022), 1-11 [B. Yaman, K. McGlinn, L. Hederman, D. O'Sullivan, M.A. Little]
- 'Evaluating quality improvement techniques within the linked data generation process', *Towards a Knowledge-Aware AI, Semantics 2022*, Vienna, Austria, IOS Press (2022), 21-35 [A. Randles, D. O'Sullivan]
- 'Towards a unified metadata model for semantic and data mappings', *Ontology Matching (OM2022), International Semantic Web Conference (ISWC 2022)* (2022), 5 [S. Alzahrani, D. O'Sullivan]
- 'Publishing climate data as linked data via virtual knowledge graphs', *IGARSS 202 IEEE International Geoscience and Remote Sensing Symposium* (2022), 4090-4093 [J. Wu, F. Orlandi, D. O'Sullivan, S. Dev]
- 'A workflow to convert live atmospheric sensor data into linked data', *IGARSS 2022 IEEE International Geoscience and Remote Sensing Symposium* (2022), 4086-4089 [J. Wu, F. Orlandi, D. O'Sullivan, S. Dev]
- 'Augmenting weather sensor data with remote knowledge graphs', *IGARSS 2022 IEEE International Geoscience and Remote Sensing Symposium* (2022), 1264-1267 [J. Wu, F. Orlandi, D. O'Sullivan, S. Dev]
- 'Modelling and analyzing changes within LD source data', *21st International Semantic Web Conference (ISWC 2022), 8th Workshop on Managing the Evolution and Preservation of the Data Web (MEPDaW)*, Hangzhou, China, CEUR WS (2022), 20-29 [A. Randles, D. O'Sullivan]
- 'Improving tourism analytics from climate data using knowledge graphs', *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 16 (2023), 2402-2412 [J. Wu, J. Pierse, F. Orlandi, D. O'Sullivan, S. Dev]
- 'Learning from the evidence: impact evaluations, ontology and policy', *2023 IEEE 17th International Conference on Semantic Computing (ICSC)*, Laguna Hills, CA, USA (2023), 104-106 [M. Murtagh-White, P.J. Wall, D. O'Sullivan]
- 'What metadata is needed for semantic and data mappings?', *IEEE 10th international workshop on semantic computing for social networks and organization sciences*, Laguna Hills, CA, USA, IEEE (2023), 312-316 [S. Alzahrani, D. O'Sullivan]
- Ruffini, Marco**, 'Optimal slicing of virtualised passive optical networks to support dense deployment of cloud-RAN and multi-access edge computing', *IEEE Network* (2022), 131-138 [S. Das, F. Slyne, M. Ruffini]
- 'Optical front/mid-haul with open access-edge server deployment framework for sliced O-RAN', *IEEE Transactions on Network and Service Management* (2022), <http://dx.doi.org/10.1109/TNSM.2022.3173915> [S. Mondal, M. Ruffini]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Optimal embedding of heterogeneous RAN slices for secure and technology-agnostic RANaaS', *IEEE Transactions on Network and Service Management*, 19, 4 (2022), 5284-5298 [J.F. Santos, D. da Silva Brilhante, J.F. de Rezende, N. Marchetti, M. Ruffini, L.A. DaSilva]
- 'Exploring service margins for optical spectrum services', *European Conference on Optical Communications (ECOC)* (2022), 1-3 [K. Kaeval, F. Slyne, S. Troia, E. Kenny, J. Pedreño Manresa, S. Patri, K. Grobe, D. Kilper, M. Ruffini, G. Jervan]
- 'Schedulers synchronization supporting Ultra Reliable Low Latency Communications (URLLC) in cloud-RAN over virtualised mesh PON', *European Conference on Optical Communications (ECOC)* (2022), 1-3 [S. Das, F. Slyne, D. Kilper, M. Ruffini]
- 'QoE-driven optimization in 5G O-RAN enabled hetnets for enhanced video service quality', *IEEE Communications Magazine* (2022), 1-7 [B. Agarwal, M.A. Togou, M. Ruffini, G.M. Muntean]
- 'A comprehensive survey on radio resource management in 5G hetnets: current solutions, future trends and open issues', *IEEE Communications Surveys and Tutorials* (2022), 1-40 [B. Agarwal, M.A. Togou, M. Ruffini, G.M. Muntean]
- 'ML approach for power consumption prediction in virtualized base stations', *IEEE Globecom, Brazil* (2022), 1-6 [M. Dzaferagic, J.A. Ayala-Romero, M. Ruffini]
- 'To embed or not to embed SHA in programmable network interface cards', *IEEE International Conference on Network and Service Management (CNSM)* (2022), 1-6 [D. Mafioletti, M. Martinello, M.R.N. Ribeiro, M. Ruffini, F. Slyn]
- Savage, Timothy**, 'Challenge based learning: recommendations for the future of higher education', *The emerald handbook of challenge based learning*, eds E. Vilalta-Perdomo, J. Membrillo-Hernández, R. Michel-Villarreal, G. Lakshmi, M. Martínez-Acosta, Emerald (2022), 391-411 [S. Gallagher, T. Savage]
- Tangney, Brendan**, 'The Bridge21 framework: impact on teachers and implications for equitable, inclusive classrooms', *ATEE spring conference 2020-2021*, eds M. Ranieri, L. Menichetti, S. Cuomo, D. Parmigiani, M. Pellegrini, Florence, Italy, Firenze University Press (2021), 151-153 [A. Bray, J.R. Byrne, B. Tangney, E. Oldham]
- 'Large-scale, design-based research facilitating iterative change in Irish schools - the Trinity Access approach', *Irish Educational Studies* (2022), 1-21 [A. Bray, C. Hannon, B. Tangney]
- Tewari, Hitesh**, 'Post-quantum cryptography techniques for secure communication in resource-constrained internet of things devices: a comprehensive survey', *Journal of Software: Practice and Experience* (2022), <https://doi.org/10.1002/spe.3121> [S. Kumari, M. Singh, R. Singh, H. Tewari]
- 'Signature based merkle hash multiplication algorithm to secure the communication in IoT devices', *Knowledge-Based Systems* (2022), <https://doi.org/10.1016/j.knosys.2022.109543> [S. Kumari, M. Singh, R. Singh, H. Tewari]
- 'Multiverse of hawkness: a universally-composable MPC-based hawk variant', *Cryptography*, 6, 3 (2022), 22 [A. Banerjee, H. Tewari]
- 'Blockchain-enabled end-to-end encryption for instant messaging applications', *2022 IEEE 23rd international symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)*, Belfast, United Kingdom (2022), 501-506 [R. Singh, A. Chauhan, H. Tewari]
- 'A post-quantum lattice based lightweight authentication and code-based hybrid encryption scheme for IoT devices', *Computer Networks*, 127 (2022), <https://doi.org/10.1016/j.comnet.2022.109327> [S. Kumari, M. Singh, R. Singh, H. Tewari]
- 'A lightweight encryption scheme for IoT devices in the fog', *Lecture notes in networks and systems, Future Technologies Conference (FTC)*, ed K. Arai, Vancouver, Canada, Springer, Cham (2022), 147-161 [M. Chun, S. Weber, H. Tewari]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

**Vogel, Carl**, 'Understanding laughter in dialog', *Cognitive Computation*, 14 (2022), 1405-1420 [M. Koutsombogera, C. Vogel]

'Mutual gaze and linguistic repetition in a multimodal corpus', *Proceedings of the language resources and evaluation conference*, Marseille, France, European Language Resources Association (2022), 2771-2780 [A. Murat, M. Koutsombogera, C. Vogel]

'On features and measures of psychological wellbeing', *Journal of Health Sciences Studies*, 2, 1 (2022), 1-34 [O. Shevleva, G. Cordasco, C. Vogel, A. Esposito]

'CLG authorship analytics: a library for authorship verification', *International Journal of Digital Humanities* (2022), <http://hdl.handle.net/2262/101337> [E. Moreau, C. Vogel]

'Gesture and part-of-speech alignment in dialogue', *Proceedings of the 26th workshop on the semantics and pragmatics of dialogue*, eds E. Gregoromichelaki, J. Hough, J.D. Kelleher (2022), 172-182 [Z. Khosrobeigi, M. Koutsombogera, C. Vogel]

'Methods for analyzing cognitive architecture', *accentuated innovations in cognitive infocommunication*, eds R. Klempous, J. Nikodem, P. Baranyi, Cham, Springer International Publishing (2023), 3-27 [C. Vogel, A. Esposito]

'Cognitive infocommunications', *Frontiers in Computer Science*, 5, 1129898 (2023), 1-7 [A. Esposito, G. Cordasco, C. Vogel, P. Baranyi]

**Wade, Vincent**, 'Enhancing self-disclosure in open-domain dialogue by candidate re-ranking', *Lecture Notes in Electrical Engineering*, 943 (2022), 243-252 [M. Soni, B.R. Cowan, V. Wade]

**Young, Gareth**, 'Extended reality Ulysses demo', *ACM international conference on interactive media experiences* (2022), <http://dx.doi.org/10.1145/3505284.3532816> [G.W. Young, N. O'Dwyer, A. Smolic]

### Research students

**Howard, Vivienne**, 'Personal protective equipment training and lived experience for healthcare staff during covid-19', *Clinical Infection in Practice*, 14 (2022), <http://hdl.handle.net/2262/98385> [J. Cahill, A. Kay, V. Howard, B. Mulcahy, M. Forde, S. George, E. Ziampra, F. Duffy, G. Lacey, F. Fitzpatrick]

**Golpayegani, Seyedeh Delaram**, 'Towards a taxonomy of AI risks in the health domain', *2022 Fourth international conference on Transdisciplinary AI (TransAI)*, Laguna Hills, CA, USA, IEEE (2022), 1-8 [D. Golpayegani, J. Hovsha, L.W.S. Rossmair, R. Saniei, J. Mistic]

**Suriyawongkul, Arthit**, 'Digital technology and privacy attitudes in times of covid-19: formal legality versus legal reality in Ireland', *Northern Ireland Legal Quarterly*, 73, 2 (2022), 283-309 [E. Celeste, S. Montgomery, A. Suriyawongkul]

**Zandamela, Abel Abdul**, 'Spherical modes driven directional modulation with a compact MIMO antenna', *IEEE Antennas and Wireless Propagation Letters*, 22, 3 (2023), 477-481 [A. Zandamela, N. Marchetti, M. Ammann, A. Narbudowicz]

### STATISTICS

**Benavoli, Alessio**, 'Prediction of functional threshold power from graded exercise test data in highly-trained individuals', *International Journal of Exercise Science*, 15, 4 (2022), 747-759 [E. McGrath, N. Mahony, N. Fleming, A. Benavoli, B. Donne]

'Quantum indistinguishability through exchangeability', *International Journal of Approximate Reasoning*, 151 (2022), 389-412 [A. Benavoli, A. Facchini, M. Zaffalon]

'A reinforcement learning system for generating instantaneous quality random sequences', *IEEE Transactions on Artificial Intelligence* (2022), 1-1 [Y. Almardeny, A. Benavoli, N. Boujnah, E. Naredo]

'Nonlinear desirability as a linear classification problem', *International Journal of Approximate Reasoning*, 152 (2023), 1-32 [A. Casanova, A. Benavoli, M. Zaffalon]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Correlated product of experts for sparse gaussian process regression', *Machine Learning* (2022), <http://dx.doi.org/10.1007/s10994-022-06297-3> [M. Schuerch, D. Azzimonti, A. Benavoli, M. Zaffalon]
- 'Credal valuation networks for machine reasoning under uncertainty', *IEEE Transactions on Artificial Intelligence* (2023), 1-10 [B. Ristic, A. Benavoli, S. Arulampalam]
- Brophy, Caroline**, 'A mixed model for assessing the effect of numerous plant species interactions on grassland biodiversity and ecosystem function relationships', *Journal of Agricultural, Biological and Environmental Statistics*, 28 (2023), 1-19 [J. McDonnell, T. McKenna, K.A. Yurkonis, D. Hennessy, R. de Andrade Moral, C. Brophy]
- 'Grassland legacy effects on yield of a follow-on crop in rotation strongly influenced by legume proportion and moderately by drought', *European Journal of Agronomy*, 138 (2022), 126531 [G. Grange, C. Brophy, J.A. Finn]
- 'Legacy effects in a grassland-crop rotation enhanced by legume content', *Grassland Science in Europe* (2022), 593-5 [G. Grange, C. Brophy, J.A. Finn]
- 'Drought and plant diversity effects on the agronomic multifunctionality of intensively managed grassland', *Grassland Science in Europe* (2022), 403-5 [G. Grange, C. Brophy, J.A. Finn]
- 'Strong beneficial effects of grassland sward diversity on reducing nitrous oxide emissions and emissions intensity', *Grassland Science in Europe* (2022), 364-6 [S. Cummins, J.A. Finn, K.G. Richards (...), C. Brophy *et al.*]
- Georgiadis, Athanasios**, 'Product Besov and Triebel-Lizorkin spaces with application to nonlinear approximation', *Constructive Approximation*, 53 (2021), 39-83 [A.G. Georgiadis, G. Kyriazis, P. Petrushev]
- 'Oracle inequalities and upper bounds for kernel density estimators on manifolds or more general metric spaces', *Journal of nonparametric statistics*, 34, 3 (2022), 734-775 [G. Cleanthous, A.G. Georgiadis, E. Porcu]
- 'Product  $(\alpha_1, \alpha_2)$ -modulation spaces', *Science China Mathematics* (2022), 1-48 [G. Cleanthous, A.G. Georgiadis]
- Ng, Tin**, 'The association between ambient UVB dose and ANCA-associated vasculitis relapse and onset', *Arthritis Research and Therapy*, 24, 1 (2022), 1-14 [J. Scott, E. Havyarimana, A. Navarro-Gallinad (...), J. Ng *et al.*]
- 'Non-homogeneous poisson process intensity modeling and estimation using measure transport', *Bernoulli* (2023) [T.L.J. Ng, A. Zammit-Mangion]
- 'Spherical poisson point process intensity function modeling and estimation with measure transport', *Spatial Statistics* (2022) [T.L.J. Ng, A. Zammit-Mangion]
- 'Penalized maximum likelihood estimator for mixture of von Mises-Fisher distributions', *Metrika* (2023) [T.L.J. Ng]
- White, Arthur**, 'Severe covid-19 is characterised by inflammation and immature myeloid cells early in disease progression', *Heliyon*, 8, 4 (2022), e09230-e09236 [L. Townsend, A.H. Dyer, A. Naughton (...), J.H. Kelliher, C. Ní Cheallaigh]
- 'The association between ambient UVB dose and ANCA-associated vasculitis relapse and onset', *Arthritis Research and Therapy*, 24, 1 (2022), 1-14 [J. Scott, E. Havyarimana, A. Navarro-Gallinad (...), A. White *et al.*]
- 'Direct incorporation of expert opinion into parametric survival models to inform survival extrapolation', *Medical Decision Making*, 43, 3 (2023), 325-336 [P. Cooney, A. White]
- 'Health-related quality of life among patients with anca vasculitis', *Nephrology Dialysis Transplantation*, 37, 3 (2022) [E. Nic an Ríogh, E. Gogarty, B. Reedy (...), A. White, M. Little]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

**Wyse, Jason**, 'Barriers and enablers to physical activity during covid-19 restrictions in Ireland', *The Health and Fitness Journal of Canada*, 14, 3 (2021) <https://doi.org/10.14288/hfjc.v14i3.481> [E.M. Barrett, C. Forde, J. Wyse]

'Did physical activity and associated barriers change during covid-19 restrictions in Ireland? Repeated cross-sectional study', *Health Promotion International*, 37, 4 (2022), daac127 [E.M. Barrett, J. Wyse, C. Forde]

'Statistical power in vitamin D randomized control trials investigating biomarkers as continuous outcomes', *The Journal of Steroid Biochemistry and Molecular Biology* (2022) [L. Zgaga, R. Shraim, E. Bolger, J. Wyse]

**Zhang, Mimi**, 'Saddlepoint approximation for the generalized inverse gaussian levy process', *Journal of Computational and Applied Mathematics*, 411 (2022), 114275 [M. Zhang, M. Revie, J. Quigley]

'Discussion of signature-based models of preventive maintenance', *Applied Stochastic Models in Business and Industry* (2022), 1-2 [M. Zhang, B. Liu]

'Non-invasive classification of macrophage polarisation by 2P-FLIM and machine learning', *eLife*, 11 (2022), e77373 [N. Neto, S. O'Rourke, M. Zhang, H. Fitzgerald, A. Dunne, M. Monaghan]

## School of Engineering

### CIVIL, STRUCTURAL AND ENVIRONMENTAL ENGINEERING

**Ali, Muhammad**, 'Enrichment of salt-tolerant CO<sub>2</sub>-fixing communities in microbial electrosynthesis systems using porous ceramic hollow tube wrapped with carbon cloth as cathode and for CO<sub>2</sub> supply', *Science of the Total Environment*, 766 (2021), <http://dx.doi.org/10.1016/j.scitotenv.2020.142668> [M.F. Alqahtani, S. Bajracharya, K.P. Katuri, M. Ali, J. Xu, M.S. Alarawi, P.E. Saikaly]

'Competition of two highly specialized and efficient acetoclastic electroactive bacteria for acetate in biofilm anode of microbial electrolysis cell', *NPJ Biofilms and Microbiomes*, 7 (2021), <http://dx.doi.org/10.1038/s41522-021-00218-3> [V. Sapireddy, K.P. Katuri, A. Muhammad, P.E. Saikaly]

'Relative importance of stochastic assembly process of membrane biofilm increased as biofilm aged', *Frontiers in Microbiology*, 12 (2021), <http://dx.doi.org/10.3389/fmicb.2021.708531> [G.K. Matar, M. Ali, S. Bagchi, S. Nunes, W-T. Liu, P.E. Saikaly]

'Adopting the circular model: opportunities and challenges of transforming wastewater treatment plants into resource recovery facilities in Saudi Arabia', *Journal of Water Reuse and Desalination* (2022), <http://hdl.handle.net/2262/101157> [M. Ali, P.Y. Hong, H. Mishra, J. Vrouwenvelder, P. Saikaly]

**Basu, Biswajit**, 'Flow in a large wind field with multiple actuators in the presence of constant vorticity', *Physics of Fluids* (2022), <http://hdl.handle.net/2262/101097> [S. Lal Basu, K. Soodhalter, B. Fitzgerald, B. Basu]

**Brazil, William**, 'Desire to work from home: results of an Irish study', *Journal of Transport Geography*, 104 (2022), 103416 [A. Stefaniec, B. Brazil, W. Whitney, B. Caulfield]

**Broderick, Brian**, 'Spatiotemporal representativeness of air pollution monitoring in Dublin, Ireland', *Science of the Total Environment*, 827, 154299 (2022), 1-27 [H. Perillo, B.M. Broderick, L.W. Gill, A. McNabola, P. Kumar, J. Gallagher]

'Experimental and computational evaluation of modal identification techniques for structural damping estimation', *International Conference on Civil and Environmental Engineering* (2022), <http://hdl.handle.net/2262/98473> [H. Moore, B. Broderick, B. Fitzgerald]

'Model validation for the wind response of modular high-rise buildings through full scale monitoring', *Civil Engineering Research in Ireland* (2022), <http://hdl.handle.net/2262/101294> [H. Moore, B. Broderick, B. Fitzgerald, V. Barrett, S. Linehan]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Vibration serviceability of modular tall buildings', *Stability and Failure of High Performance Composite Structures* (2022), 221-248 [R. Banuru, B. Broderick, J. Hickey, S.B. Singh]
- 'Rapid seismic economic loss assessment for steel concentrically braced frames designed to eurocode 8', *CE/papers, Eurosteel 2021*, Sheffield (2021), 1856-1863 [J. Hickey, B. Broderick]
- 'Shake table testing of self-centring concentrically braced frames', *CE/papers, Eurosteel 2021*, Sheffield (2021), 1949-1956 [J. Goggins, Y. Jiang, B.M. Broderick (...), B. Petreski, I. Markovski]
- 'Cyclic testing of flush end-plate semi-rigid steel connections', *STESSA*, Montreal (2021), 135-140 [B.M. Broderick, A.W. Thomson]
- 'Dynamic buckling of steel braces in concentrically braced frames', *SeismiCON22, 3rd Intl Conf on Seismic Design and Analysis of Structures* (2022), 12-21 [B.M. Broderick, T. Ryan]
- 'Integrated transportation and land use regression modelling for nitrogen dioxide mitigation', *Transportation Research Part D: Transport and Environment*, 115, 103572 (2023) [A. Ó Domhnaill, B. Broderick, M. O'Mahony]
- 'Regression models for predicting the inelastic seismic response of steel braced frames', *J of Constructional Steel Research*, 194, 107338 (2022), <https://doi.org/10.1016/j.jcsr.2022.107338> [J. Hickey, B. Broderick]
- Brunhoferova, Hana*, 'Removal of 27 micropollutants by selected wetland macrophytes in hydroponic conditions', *Chemosphere* (2021), 130980 [H. Brunhoferova, S. Venditti, M. Schlien, J. Hansen]
- 'Characterization of unconventional sand based substrates for adsorption of micropollutants in nature-based systems', *Journal of Environmental Management* (2022), 115593 [H. Brunhoferova, S. Venditti, J. Hansen]
- 'Behaviour of 27 selected emerging contaminants in vertical flow constructed wetlands as post-treatment for municipal wastewater', *Science of the Total Environment* (2022), 153234 [S. Venditti, H. Brunhoferova, J. Hansen]
- 'Assessing the impact of micropollutants mitigation measures using vertical flow constructed wetlands for municipal wastewater catchments in the greater region: a reference case for rural areas', *Water Science and Technology* (2022), 1-14 [S. Venditti, A. Kiesch, H. Brunhoferova, M. Schlien, H. Knerr, U. Dittmer, J. Hansen]
- Caulfield, Brian*, 'Customer engagement strategies in retail electricity markets: a comprehensive and comparative review', *Energy Research and Social Science*, 90 (2022), 102611 [H. Hampton, A. Foley, D. Del Rio, B. Smyth, D. Laverty, B. Caulfield]
- 'Implications of covid-19 for future travel behaviour in the rural periphery', *European Transport Research Review*, 14 22 (2022), 1-11 [J.D. Nelson, B. Caulfield]
- 'Desire to work from home: results of an Irish study', *Journal of Transport Geography*, 104 (2022), 103416 [A. Stefaniec, B. Brazil, W. Whitney, B. Caulfield]
- 'Planning by cycle parking type: a cycle parking preference typology for cyclists', *Case Studies on Transport Policy*, 10 (2022), 1930-1944 [R. Egan, C. Dowling, B. Caulfield]
- 'Examining the potential environmental and travel time saved benefits of remote working hubs', *Transport Policy*, 127 (2022), 139-147 [B. Caulfield, A. Charly]
- 'What causes energy and transport poverty in Ireland? Analysing demographic, economic, and social dynamics and policy implications', *Energy Policy*, 172 (2023), 113313 [C. Lowans, A. Foley, D. Furszyfer Del Rio, B. Caulfield, B. Sovocool, S. Griffiths, D. Rooney]
- 'Pathways to decarbonising the transport sector: the impacts of electrifying taxi fleets', *Renewable and Sustainable Energy Reviews*, 174 (2023), 113160 [L. Kinsella, A. Stefaniec, A. Foley, B. Caulfield]
- 'Exploring the elements of effective cycle parking: a literature review', *Journal of Urban Mobility*, 3 (2023), 100046 [R. Egan, C. Dowling, B. Caulfield]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Factors influencing e-cargo bike mode choice for small businesses', *Renewable and Sustainable Energy Reviews*, 178 (2023), 113253 [F. Malik, R. Egan, C. Dowling, B. Caulfield]
- Charly, Anna, 'Examining the potential environmental and travel time saved benefits of remote working hubs', *Transport Policy*, 127 (2022), 139-147 [B. Caulfield, A. Charly]
- 'Assessing the impact of mobility on the incidence of covid-19 in Dublin city', *Sustainable Cities and Society*, 80, 103770 (2022) [C.K. Manzira, A. Charly, B. Caulfield]
- Fitzgerald, Breiffni, 'Experimental and computational evaluation of modal identification techniques for structural damping estimation', *International conference on civil and environmental engineering* (2022), <http://hdl.handle.net/2262/98473> [H. Moore, B. Broderick, B. Fitzgerald]
- 'Fluid inerter for optimal vibration control of floating offshore wind turbine towers', *Engineering Structures* (2022), <http://hdl.handle.net/2262/99598> [B. Fitzgerald, S. Sarkar]
- 'Flow in a large wind field with multiple actuators in the presence of constant vorticity', *Physics of Fluids* (2022), <http://hdl.handle.net/2262/101097> [S. Lal Basu, K. Soodhalter, B. Fitzgerald, B. Basu]
- 'A study of wind-wave misalignment for the Irish coastline and its effect on the wind turbine response', *Civil Engineering Research in Ireland*, Dublin (2022), <http://hdl.handle.net/2262/101182> [S. Baisthakur, B. Fitzgerald]
- 'Model validation for the wind response of modular high-rise buildings through full scale monitoring', *Civil Engineering Research in Ireland* (2022), <http://hdl.handle.net/2262/101294> [H. Moore, B. Broderick, B. Fitzgerald, V. Barrett, S. Linehan]
- Gallagher, John, 'Spatiotemporal representativeness of air pollution monitoring in Dublin, Ireland', *Science of the Total Environment*, 827, 154299 (2022), 1-27 [H. Perillo, B.M. Broderick, L.W. Gill, A. McNabola, P. Kumar, J. Gallagher]
- Ghosh, Bidisha, *EcoMetrics - environmental supporting conditions for groundwater-dependent terrestrial ecosystems*, Wexford, Ireland, Environmental Protection Agency (2022), 1-54 [L. Gill, S. Bhatnagar, E. Bijkerk (...), B. Ghosh et al.]
- Gill, Laurence, 'Hybrid data-driven models for hydrological parameters simulation and projection on the catchment scale', *Sustainability*, 14 (2022), 4037 [S. Gharbia, K. Riaz, J. Anton, G. Makrai, L. Gill, L. Creedon, M. McAfee, P. Johnston, F. Pilla]
- 'Flow cytometry and fecal indicator bacteria analyses for fingerprinting microbial pollution in karst aquifer systems', *Water Resources Research*, 58 (2022), e2021WR029840 [L. Vucinic, D. O'Connell, R. Teixeira, C. Coxon, L.W. Gill]
- 'Review of the ecosystem services of temperate wetlands and their valuation tools', *Water*, 14 (2022), 1345 [F. Delle Grazie, L.W. Gill]
- 'Assessment of climate change impact on the annual maximum flood in an urban river in Dublin, Ireland', *Sustainability*, 14, 8 (2022), 4670 [A. Sarkar Basu, L.W. Gill, F. Pilla, B. Basu]
- 'Palaeoplasticene platform', colliding epistemes, BOZAR, Centre for Fine Art, Brussels (2022) [K. Austen, I. Zliobaite, L.W. Gill]
- 'Nonlinear time series based forecast modelling of groundwater flooding at karst region in Ireland', *EGU General Assembly 2022*, Vienna, Austria (2022), <https://doi.org/10.5194/egusphere-egu22-7539> [B. Basu, L. Gill]
- 'Spatial variation of microbial community structure of on-site soil treatment units in a temperate climate and the role of effluent pretreatment in the development of the biomat community', *Frontiers in Microbiology*, 13 (2022), 915856 [A.J. Criado Monleon, J. Knappe, C. Somlai, C.O. Betancourth, M. Aii, T.P. Curtis, L.W. Gill]
- 'The challenge of developing ecohydrological metrics for vegetation communities in calcareous fen wetland systems', *Frontiers in Earth Sciences*, 10, 91723 (2022), <https://doi.org/10.3389/feart.2022.917233> [E. Bijkerk, S. Regan, P.M. Johnston, C. Coxon, L.W. Gill]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Characterization of seasonal groundwater origin and evolution processes in a geologically heterogeneous catchment using geophysical, isotopic and hydro-chemical techniques (Lough Gur, Ireland)', *Hydrological Processes*, 36 (2022), e14706 [D.W. O'Connell, C. Rocha, E. Daly (...), C. Hickey, L.W. Gill]
- 'Multiple fluorescence approaches to identify rapid changes in microbial indicators at karst springs', *Journal of Contaminant Hydrology*, 254, 104129 (2023) [L. Vucinic, D. O'Connell, D. Dubber, C. Coxon, L. Gill]
- Grey, Thomas**, 'Online-based participatory design. A case study of developing international standards during a pandemic', *Strategic Design Research Journal*, 15, 1 (2022), 39-51 [M. Zallio, T. Grey, P. Boland, H. Kelly, P.J. White, E. O'Ferrall]
- Igoe, David**, 'Examination of the reduction in natural frequency of laterally loaded piles due to strain-dependence of soil shear modulus', *Ocean Engineering*, 258, Article 111614 (2022), <http://hdl.handle.net/2262/100119> [L. Prendergast, D. Igoe]
- 'Review of cyclic models for the design of monopiles supporting offshore wind turbines', *Geotechnical Society of Ireland Conference*, Port Laois (2022), 43-52 [L. Lapastoure, S. Jalilvand, A. Diambra, D. Igoe]
- 'A review of anchoring solutions for offshore wind turbines', *Geotechnical Society of Ireland Conference*, Port Laois (2022), 79-84 [R. Varghese, V. Pakrashi, D. Igoe]
- 'Comparison of geotechnical design criteria for offshore monopiles', *Geotechnical Society of Ireland Conference*, Port Laois, Ireland (2022), 37-42 [D. Igoe, L. Lapastoure, S. Jalilvand]
- Illahi, Ubaid**, 'Sustainable transportation attainment index: multivariate analysis of indicators with an application to selected states and National Capital Territory (NCT) of India', *Environment, Development and Sustainability*, Vol. 23, Issue 3 (2021), 3578-3622 [U. Illahi, M. Shafi Mir]
- Johnston, Paul**, *EcoMetrics-environmental supporting conditions for groundwater-dependent terrestrial ecosystems*, Wexford, Ireland, Environmental Protection Agency (2022), 1-54 [L. Gill, S. Bhatnagar, E. Bijkerk (...), C. Coxon, P. Johnston]
- McNabola, Aonghus**, 'Is there a residual potential for small and micro hydropower in Europe? A screening-level regional assessment', *Water Resources Management* (2022), 1-18 [E. Qaranta, K. Bodis, E. Kasiulis, A. McNabola, A. Pistocchi]
- 'The social return potential of micro hydropower in water networks based on demonstrator examples', *Energies*, 15, 6625 (2022), 1-21 [K. Adeyeye, J. Gallagher, H.M. Ramos, A. McNabola]
- 'The impact of street level particulate emissions on the energy performance of roof level building ventilation systems', *Journal of Wind Engineering and Industrial Aerodynamics*, 233, 105310 (2023), 1-13 [Considine B, Gallagher J, Kumar P, McNabola A.]
- 'Generalising the design of pump-as-turbine micro-hydropower plants in water distribution networks with large flow and head variations', *EWAS5; water security and safety management: emerging threats or new challenges?* eds V. Kanakoudis, M. Giugni, Naples (2022), 1-9 [D. Mitrovic, A.P. Williams, A. McNabola]
- 'Development and validation of a computational fluid dynamics modelling methodology for isolated and urban street canyon configurations using wind tunnel measurements', *29th international conference on modelling, monitoring and management of air pollution*, (2021), 104-116 [M. Vasudevan, B. Basu, F. Pilla, A. McNabola]
- 'Improving heat recovery from industrial wastewater using process-oriented modelling and experiments', *AQUA 360: water for all-emerging issues and innovations*, ed F.A. Memon, Exeter, UK (2021), 1-2 [M. Murali, J. Spriet, A. McNabola]
- 'Thermal recapture from kitchen wastewater', *AQUA 360: water for all-emerging issues and innovations*, ed F.A. Memon, Exeter, UK (2021), 1-2 [A.P. Singh, A. McNabola]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'The co-development of HedgeDATE, a public engagement and decision support tool for air pollution exposure mitigation by green infrastructure', *Sustainable Cities and Society*, 75, 103299 (2021), 1-12 [Y. Barwise, P. Kumar, A. Tiwari (...), A. McNabola *et al.*]
- 'Experimental characterization of a submersible Pump As Turbine (PAT) and case-study of its application to a Micro Pumped Hydro Energy Storage ( $\mu$ -PHES)', *39th IAHR World Congress*, Granada Spain (2022), 1-10 [D. Novara, M. Crespo Chacon, A. Parisi Ploumpi, A. McNabola]
- 'Improved design of hybrid grease trap for reduced energy consumption and improved FOG retention in hot wastewater', *EWas5; water security and safety management: emerging threats or new challenges?*, Naples Italy (2022), 1-6 [A.P. Singh, A. McNabola]
- 'Exploring the optimal location of pumps as turbines within branched irrigation networks by global optimization', *Water Resources Research*, 59 (2023), 1-20 [M.C. Morani, M. Crespo Chacon, J. Garcia Morillo, A. McNabola, O. Fecarotta]
- 'The role of micro-hydropower energy recovery in the water-energy-food nexus', *EWas5; water security and safety management: emerging threats or new challenges?*, Naples Italy (2022), 1-6 [A. McNabola, A. Garcia Merida, J.A. Rodriguez Diaz]
- 'On-road remote sensing of vehicles in Dublin: measurement and emission factor estimation', *Transport Research Part D: Transport and the Environment*, 117, 103620 (2023), 1-14 [S. Mahesh, A. McNabola, W. Smith (...), H. Walker, B. Ghosh]
- 'Experimental and numerical investigation of drain water heat recovery in a grease interceptor', *Journal of Cleaner Production*, 403, 136799 (2023), 1-15 [A.P. Singh, A. McNabola]
- Misstear, Bruce**, 'A global perspective on assessing groundwater quality', *Hydrogeology Journal* (2023), 11-14 [B.D.R. Misstear, C. Ruz Vargas, D. Lapworth, I. Ouedraogo, J. Podgorski]
- 'Building and updating the knowledge base', *The United Nations world water development report 2022: groundwater: making the invisible visible*, eds M. Mileto, R. Connor, Paris, UNESCO (2022), 143-154 [B.D.R. Misstear, A. Aureli, A. Sterckx, C. Ruz Vargas, K. Scheihing, N. Kukuric]
- 'Irish holy wells: their groundwater sources, chemistries and healing reputations', *IAH Irish group: groundwater - making the invisible visible* (2022), IV-25-IV-30 [B.D.R. Misstear]
- 'Groundwater quality: global challenges, emerging threats and novel approaches', *Hydrogeology Journal*, 31, 1 (2023), 15-18 [D. Lapworth, T. Boving, B. Brauns (...), B.D.R. Misstear *et al.*]
- Morrissey, Patrick**, 'An evaluation of semi-distributed-pipe-network and distributed-finite-difference models to simulate karst systems', *Hydrogeology Journal*, 27 (2021), 259-279 [L.W. Gill, P. Schuler, L. Duran, P.M. Johnston, P. Morrissey]
- 'Impacts of climate change on groundwater flooding and ecohydrology in lowland karst', *Hydrology and Earth System Sciences*, 25 (2021), 1923-1941 [P. Morrissey, P. Nolan, T. McCormack, P.M. Johnston, O. Naughton, L.W. Gill]
- 'Ecohydrological metrics for vegetation communities in turloughs (ephemeral karstic wetlands)', *Ecohydrology*, 14 (2021), e2316 [S. Bhatnagar, L.W. Gill, S. Waldren, N. Sharkey, O. Naughton, P. Johnston, C. Coxon, P. Morrissey, B. Ghosh]
- 'Application of nonlinear time series and machine learning algorithms for forecasting groundwater flooding in a lowland karst area', *Water Resources Research*, 58 (2022), e2021WR029576 [B. Basu, P. Morrissey, L.W. Gill]
- O'Connell, David**, 'An assessment of contamination fingerprinting techniques for determining the impact of domestic wastewater treatment systems on private well supplies', *Environmental Pollution*, 268 (2021), doi.org/10.1016/j.envpol.2020.115687 [C. Fennell, B.D.R. Misstear, D. O'Connell, D. Dubber, P. Behan, M. Danaher, M. Moloney, L.W. Gill]
- 'Flow cytometry and fecal indicator bacteria analyses for fingerprinting microbial pollution in karst aquifer systems', *Water Resources Research*, 58 (2022), e2021WR029840 [L. Vucinic, D. O'Connell, R. Teixeira, C. Coxon, L.W. Gill]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'The use of the  $-18\text{ O P}$  to study P cycling in the environment', *Oxygen isotopes of inorganic phosphate in environmental samples*, eds V. Pfahler, J. Adu-Gyamfi, Springer (2022), 1-15 [V. Pfahler, J. Adu-Gyamfi, D. O'Connell, F. Tamburini]
- 'Characterization of seasonal groundwater origin and evolution processes in a geologically heterogeneous catchment using geophysical, isotopic and hydro-chemical techniques (Lough Gur, Ireland)', *Hydrological Processes*, 36 (2022), e14706 [D.W. O'Connell, C. Rocha, E. Daly (...), C. Hickey, L.W. Gill]
- 'Multiple fluorescence approaches to identify rapid changes in microbial indicators at karst springs', *Journal of Contaminant Hydrology*, 254, 104129 (2023) [L. Vucinic, D. O'Connell, D. Dubber, C. Coxon, L. Gill]
- O'Kelly, Brendan**, 'Extraction, characterisation and remediation of microplastics from organic solid matrices', *Environmental Geotechnics* (2022), 34 [V.S.N.S. Goli, E.K. Paleologos, A. Farid (...), B.C. O'Kelly *et al.*]
- 'Discussion of 'Advancement in estimation of undrained shear strength through fall cone tests' eds A. Ghosh Dastider, S. Chatterjee, P. Basu', *Journal of Geotechnical and Geoenvironmental Engineering*, 148, 6 (2022), 2 (article 07022005) [B.C. O'Kelly]
- 'Discussion of 'Mohajerani method: tool for determining the liquid limit of soils using fall cone test results with strong correlation with the Casagrande test' eds E. Hrubesova, B. Lunackova, M. Mohyla [Engineering Geology 278 (2020) 105852]', *Engineering Geology*, 302, article 106623 (2022), 5 [B.C. O'Kelly, P.J. Vardanega, S.K. Haigh]
- 'Modeling the compaction characteristics of fine-grained soils blended with tire-derived aggregates', *Sustainability in geotechnics: the use of environmentally friendly materials*, ed C.S. Vieira, Basel, Switzerland, MDPI (2022), 151-172 [A. Soltani, A. Azimi, B.C. O'Kelly]
- 'Discussion of 'Behaviour of a foam mixture as a lightweight construction material' [Int J of Geosynth and Ground Eng (2021) 7(3), 51]', *International Journal of Geosynthetics and Ground Engineering*, 8, 2 (2022), 2 (article 30) [B.C. O'Kelly, A. Soltani]
- 'Stabilization of a highly expansive soil using waste-tire-derived aggregates and lime treatment', *Case Studies in Construction Materials*, 16, article e01133 (2022), 14 [A. Soltani, A. Taheri, A. Deng, B.C. O'Kelly]
- 'Geotechnical investigation of low-plasticity organic soil treated with nano-calcium carbonate', *Journal of Rock Mechanics and Geotechnical Engineering*, 15, 2 (2023), 500-509 [G. Kannan, B.C. O'Kelly, E.R. Sujatha]
- 'Discussion: Predicting compaction properties of soils at different compaction efforts', *Proceedings of the Institution of Civil Engineers-Geotechnical Engineering*, 175, 5 (2022), 549-552 [L. Di Matteo, G. Spagnoli, A. Soltani, A. Azimi, B.C. O'Kelly]
- 'Machine learning techniques for relating liquid limit obtained by Casagrande cup and fall cone test in low-medium plasticity fine grained soils [Eng. Geol. (2021) 294, 106381]', *Engineering Geology*, 306 (2022), 4 (article 106746) [B.C. O'Kelly, A. Soltani]
- 'Discussion of 'Physio-chemical properties, consolidation, and stabilization of tropical peat soil using traditional soil additives - a state of the art literature review' eds A. Ahmad, M. Hartadi Sutanto, M.A.M. Al-Bared, I.S. Hamonangan Harahap, S. Vahid Alavi Nezhad Khaili Abad, M. Ali Khan', *KSCE Journal of Civil Engineering*, 26, 8 (2022), 3455-3459 [B.C. O'Kelly]
- 'Appraisal of novel power-based extrusion methodology for consistency limits determinations of fine-grained soils', *Proceedings of the civil engineering research in Ireland 2022 conference*, eds N. Holmes, C. de Paor, R.P. West, Dublin, Ireland, Civil Engineering Research Association of Ireland (2022), 317-322 [B.C. O'Kelly]
- 'ANN-based bubble tracking algorithm for clay slurries containing large gas bubbles using x-ray CT', *Proceedings of the Civil Engineering Research in Ireland 2022 Conference*, eds N. Holmes, C. de Paor, R.P. West, Dublin, Ireland, Civil Engineering Research Association of Ireland (2022), 306-310 [S. Xu, J. Lai, B.C. O'Kelly, B. Zhao]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Effects of cement kiln dust on physicochemical and geomechanical properties of loess soil, Semnan Province, Iran', *Arabian Journal of Geosciences*, 15, article 1482 (2022), 12 [E. Sharifi Teshnizi, B.C. O'Kelly, J. Karimiazar, S. Moosazadeh, R. Arjmandzadeh, A. Pani]
- 'Fate and impact of nano/microplastic in the geoenvironment - ecotoxicological perspective', *Environmental Geotechnics* (2022), 14 [B.C. O'Kelly, O. Pantos, L. Weaver, T.S. Sarris, V.S.N.S. Goli, A. Mohammad, P. Singh, D.N. Singh]
- 'Comment on 'A new approach to stabilization of calcareous dune sand' [Int. J. Environ. Sci. Technol. 19, 3581-3592 (2022)]', *International Journal of Environmental Science and Technology*, 20, 4 (2023), 4723-4726 [Vaverková, M.D. and O'Kelly, B.C.]
- 'Discussion of 'Determining soil plasticity utilizing Manafi method and apparatus' by Masoud S. G. Manafi, An Deng, Abbas Taheri, Mark B. Jaksa, and Nagaraj HB, published in *Geotechnical Testing Journal* 45, no. 4 (2022): 797-818', *Geotechnical Testing Journal*, 45, 6 (2022), 1144-1150 [B.C. O'Kelly, J.M. Moreno-Maroto, J. Alonso-Azcárate]
- 'Comments on 'Strength and deformation behavior of fine-grained soils reinforced with hair fibers and its application in pavement design' by Ayothiraman et al. [Journal of Natural Fibers, DOI: 10.1080/15440478.2021.1954129]', *Journal of Natural Fibers*, 19, 17 (2022), 15846-15850 [O'Kelly, B.C. and Soltani, A.]
- 'Experimental study on cyclic simple shear behaviour of predominantly dilative silica sand', *International Journal of Geotechnical Engineering*, 17, 1 (2023), 91-105 [A. Baghbani, S. Costa, B.C. O'Kelly, A. Soltani, M. Barzegar]
- 'Paradigm shifts in incinerator ash, sediment material recovery and landfill monitoring', *Environmental Geotechnics* (2022), 14 [E.K. Paleologos, R. Bunge, G. Weibel (...), B.C. O'Kelly et al.]
- 'Biopolymer based soil treatment for geotechnical engineering applications', *Handbook of Biopolymers*, eds S. Thomas, C. Jose Chirayil, B. Thomas, Singapore, Springer (2023), 18 [Sujatha, E.R. and O'Kelly, B.C.]
- 'Discussion of 'Determining soil plasticity utilizing Manafi method and apparatus' by Masoud S. G. Manafi, A. Deng, Abbas Taheri, Mark B. Jaksa, and Nagaraj HB, published in *Geotechnical Testing Journal* 45, 4 (2022): 797-818', *Geotechnical Testing Journal*, 46, 3 (2023), 7 [S.K. Haigh, B.C. O'Kelly, P.J. Vardanega]
- 'Reducing the erodibility of sandy soils engineered by cyanobacteria inoculation: a laboratory investigation', *Sustainability*, 15, 4 (2023), 19 (article 3811) [A. Rabiei, S.M.A. Zomorodian, B.C. O'Kelly]
- 'Enzymatic-induced calcite precipitation (EICP) method for improving hydraulic erosion resistance of surface sand layer: a laboratory investigation', *Sustainability*, 15, 6 (2023), 17, 5567 [S.M.A. Zomorodian, S. Nikbakht, H. Ghaffari, B.C. O'Kelly]
- 'Reappraisal of linear shrinkage test for plasticity index determination and classification of fine-grained soils', *Applied Clay Science*, 238 (2023), 13, 106920 [A. Soltani, M. Azimi, B.C. O'Kelly]
- O'Mahony, Margaret**, 'Integrated transportation and land use regression modelling for nitrogen dioxide mitigation', *Transportation Research Part D: Transport and Environment*, 115, 103572 (2023) [A. Ó Domhnaill, B. Broderick, M. O'Mahony]
- Pavia, Sara**, 'Fitness of a high-calcium slag for the production of alkali activated materials', *CEES 2021-international conference on Construction, Energy, Environment and Sustainability*, Itecons-Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade eds, Coimbra, Portugal, ISBN: 978-989-54499-1-0 (2021), <http://hdl.handle.net/2262/98266> [O. Alelweet, S. Pavia]
- 'A comparative study of the environmental impact of alkali activated and traditional materials', *Civil eng. research Ireland*, eds N. Holmes, C. De Paor, R. West, Dublin (2022), 613-618 [O. Alelweet, S. Pavia]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Effect of the early dissolution of Al-phases in reactive industrial wastes, on the setting times and rheology of sustainable binders', *Civil Eng. Research Ireland*, eds N. Holmes, C. De Paor, R. West, Dublin (2022), 34-38 [Z. Lei, S. Pavia]
- Sarvadevabhatla, Sathwik, 'Laboratory and discrete-based numerical investigation on the collision problem of impactor-block systems with soft-porous and hard-crystalline analog rocks', *International Journal for Numerical and Analytical Methods in Geomechanics* (2022), <http://dx.doi.org/10.1002/nag.3313> [L. Luo, S.K. Sarvadevabhatla, H. He, K. Senetakis]
- 'Experimental and DEM studies on the normal coefficient of restitution of grain-block systems in the presence of thick and thin water layers under low-velocity impacts', *Computers and Geotechnics* (2022), <http://dx.doi.org/10.1016/j.compgeo.2022.104711> [L. Luo, S.K. Sarvadevabhatla, H. He, K. Senetakis]
- 'Micromechanical behaviour in shearing of reproduced flat LBS grains with strong and weak artificial bonds', *Acta Geotechnica* (2021), <http://dx.doi.org/10.1007/s11440-020-01101-9> [S.K. Sarvadevabhatla, K. Senetakis, M.R. Coop, J. Zhao]
- 'Influence of loading history and soil type on the normal contact behavior of natural sand grain-elastomer composite interfaces', *Polymers* (2021), <http://dx.doi.org/10.3390/polym13111830> [Y. Tian, S.K. Sarvadevabhatla, K. Senetakis]
- 'A study on the failure behavior of sand grain contacts with hertz modeling, image processing, and statistical analysis', *Sensors* (2021), <http://dx.doi.org/10.3390/s21134611> [S. Li, S.K. Sarvadevabhatla, K. Senetakis]
- 'A grain-scale study of mojave mars simulant (Mms-1)', *Sensors* (2021), <http://dx.doi.org/10.3390/s21144730> [S.K. Sarvadevabhatla, K. Senetakis]
- 'Mechanical, micro-structure and contour mapping analyses of highly-porous intermediate-texture analog rock from instrumented micro-indentation in conjunction with statistical/machine learning tools', *Geomechanics and Geophysics for Geo-energy and Geo-Resources* (2022), <http://dx.doi.org/10.1007/s40948-022-00404-3> [S. Li, J. Ren, S.K. Sarvadevabhatla, K. Senetakis]
- '3D DEM analysis of analogue proppant-fractured rock system interaction', *Bulletin of Engineering Geology and the Environment* (2022), <http://dx.doi.org/10.1007/s10064-021-02500-2> [S.K. Sarvadevabhatla, H. He, K. Senetakis]
- 'Characterization of two types of shale rocks from Guizhou China through micro-indentation, statistical and machine-learning tools', *Journal of Petroleum Science and Engineering*, 208 (2022), 109304 [S.K. Sarvadevabhatla, K. Senetakis]
- 'Application of nanoindentation in the characterization of a porous material with a clastic texture', *Materials*, 14, 16 (2021), 4579 [S.K. Sarvadevabhatla, Kostas Senetakis]
- 'Cyclic normal load-displacement behaviour of clay-coated sand grain contacts', *Geotechnique* (2021), <http://dx.doi.org/10.1680/jgeot.18.P.216> [S.K. Sarvadevabhatla, K. Senetakis, J. Zhou]
- 'Micromechanical-based experimental and analytical studies on rate effects and stick-slip instability of smooth quartz surfaces in the presence of plastic and non-plastic gouges', *International Journal for Numerical and Analytical Methods in Geomechanics* (2021), <http://dx.doi.org/10.1002/nag.3178> [S.K. Sarvadevabhatla, K. Senetakis]
- 'Influence of natural coating type on the frictional and abrasion behaviour of siliciclastic-coated sedimentary sand grains', *Engineering Geology* (2021), <http://dx.doi.org/10.1016/j.enggeo.2020.105983> [S.K. Sarvadevabhatla, S. Li, K. Senetakis]
- 'Small-scale size effects on the shearing behavior and sliding stiffness reduction-displacement curves of rock-plastic gouge simulant under low normal stresses', *Journal of Structural Geology* (2022), <http://dx.doi.org/10.1016/j.jsg.2022.104553> [S.K. Sarvadevabhatla, K. Senetakis]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Investigation of the mechanical properties and the influence of micro-structural characteristics of aggregates using micro-indentation and Weibull analysis', *Construction and Building Materials* (2021), <http://dx.doi.org/10.1016/j.conbuildmat.2020.121509> [S.K. Sarvadevabhatla, S. Li, K. Senetakis]
- 'Corrigendum to: Interface load-displacement behaviour of sand grains coated with clayey powder: experimental and analytical studies (Soils and Foundations, 59, 6 (2019) 1695-1710, 10.1016/j.sandf.2019.07.010)', *Soils and Foundations*, 61, 4 (2021), 1189 [K. Senetakis, S.K. Sarvadevabhatla]
- Stefaniec, Agnieszka**, 'Desire to work from home: results of an Irish study', *Journal of Transport Geography*, 104 (2022), 103416 [A. Stefaniec, B. Brazil, W. Whitney, B. Caulfield]
- 'Pathways to decarbonising the transport sector: the impacts of electrifying taxi fleets', *Renewable and Sustainable Energy Reviews*, 174 (2023), 113160 [L. Kinsella, A. Stefaniec, A. Foley, B. Caulfield]
- West, Roger**, 'Characterisation and performance enhancement of cement-based thermoelectric materials', *Polymers*, 14, 2311 (2022), 19 [R. Jani, N. Holmes, R. West (...), H. Yin, B. Wojciechowski]
- 'Failure modes of load-bearing sandwich panels in shear', *Stability and failure of high performance composite structures*, eds S.B. Singh, S.V. Barai, Springer Nature (2022), 39-66 [O. Kinnane, R.P. West, R. O'Hegarty]
- 'Shrinking sports socks and cracking concrete slabs', *Civil Engineering Research in Ireland (CERI2022)*, eds N. Holmes, C. de Paor, R.P. West, Dublin (2022), 544-548 [R.P. West, S.W. West]
- 'Understanding mould growth causes and solutions for A-rated homes', *Civil Engineering Research in Ireland (CERI2022)*, eds N. Holmes, C. de Paor, R.P. West, Dublin (2022), 210-215 [O. Murphy, R.P. West, E. Kelly, N. Saini]
- 'Modelling human influences on the indoor environment in homes', *Civil Engineering Research in Ireland (CERI2022)*, eds N. Holmes, C. de Paor, R.P. West, Dublin (2022), 497-502 [N. Saini, R.P. West, P. Shiel, R. Kerrigan, R. Filho, I. Pyburn]
- 'A solution to bamboo reinforced concrete's bond problem', *Civil Engineering Research in Ireland (CERI2022)*, eds N. Holmes, C. de Paor, R.P. West, Dublin (2022), 22-27 [M. Childs, R.P. West]
- 'Concrete matters - 25 years of concrete research in Ireland conferences', *Civil Engineering Research in Ireland (CERI2022)*, eds N. Holmes, C. de Paor, R.P. West, Dublin (2022), 2-10 [R.P. West, M. Richardson]
- 'Optimising heating costs in low-occupancy offices', *Civil Engineering Research in Ireland (CERI2022)*, eds N. Holmes, C. de Paor, R.P. West, Dublin (2022), 573-578 [E. Markey, R.P. West, N. Saini]
- 'Delivering materials laboratory sessions to large classes during the pandemic', *Civil Engineering Research in Ireland (CERI2022)*, eds N. Holmes, C. de Paor, R.P. West, Dublin (2022), 549-554 [R.P. West, D. O'Loughlin, A. Pakdel, M. Grimes, S. Hunt]
- Xiao, Liwen**, 'Extraction, characterisation and remediation of microplastics from organic solid matrices', *Environmental Geotechnics* (2022), 34 [V.S.N.S. Goli, E.K. Paleologos, A. Farid (...), L. Xiao *et al.*]

### Research students

- Al-Mhdawi, Mohammed Khalid**, 'Modeling the effects of construction risks on the performance of oil and gas projects in developing countries: project managers' perspective', *Civil Engineering Research in Ireland Conference (CERI 2022)*, eds N. Holmes, C. De Paor, R.P. West, Dublin, Ireland (2022), 486-491 [M.K.S. Al-Mhdawi, A. O'Connor, M. Brito, A. Qazi, H.A. Rashid]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

Hickey, John, 'Regression models for predicting the inelastic seismic response of steel braced frames', *J of Constructional Steel Research*, 194, 107338 (2022), <https://doi.org/10.1016/j.jcsr.2022.107338> [J. Hickey, B. Broderick]

### ELECTRONIC AND ELECTRICAL ENGINEERING

Bates, Enda, 'Ambisonic decoder test methodologies based on loudspeaker reproduction', *Audio Engineering Society, 152nd European convention*, Audio Engineering Society (2022), <http://hdl.handle.net/2262/99599> [E. Bates, W. David, D. Dempsey]

Boland, Francis, 'HRTF clustering for robust training of a DNN for sound source localization', *Journal Audio Engineering Society*, 70, 12 (2022), 1015-1026 [H. O'Dwyer, F. Boland]

Cleare, Ann, 'The little lives', *The little lives: an opera* (2022) [A. Cleare]

'Anfa for augmented contrabass flute with visuals', New York (2021) [A. Cleare]

'Periscope 1: Léas for voice, a gift for the Royal Academy of Music's 200th birthday celebration, Royal Academy of Music, London, UK' (2022) [A. Cleare]

'Periscope 1: Léas, performed by Angharad Rowlands, Angela Burgess Recital Hall, Royal Academy of Music, London, UK' (2022) [A. Cleare]

'Performance of Dorchadas for ensemble by international ensemble modern academy, Hochschule für Musik und Darstellende Kunst (HfMDK), Frankfurt, Germany' (2022) [A. Cleare]

'Ceol|Glór|Eitilt for voice and piano, performance by Gavan Ring and Fiachra Garvey, Wigmore Hall, London, UK' (2022) [A. Cleare]

'The physics of fog, swirling for large ensemble and live electronics, performance by Musikfabrik, Berlin Philharmonie' (2021) [A. Cleare]

'Anfa for augmented contrabass flute with visuals, premiere by Claire Chase, Flute, The Kitchen, New York' (2021) [A. Cleare]

'The physics of fog, swirling for large ensemble performed by the Cabinet of Curiosities, Goethe-Institut Hall, Tokyo, Japan' (2021) [A. Cleare]

'Performance of 93 million miles away for violin, cello, and piano, performed by Uusinta Ensemble, Kallio Church, Helsinki, Finland', Finland (2021) [A. Cleare]

'Performance of I am not a clockmaker either for piano and electronics at Ljubljana New Music Forum', Slovenia (2021) [A. Cleare]

'Performance of ore by Musikfabrik, Berlin Philharmonie' (2021) [A. Cleare]

'Performance of mire | | veins by Musikfabrik, Berlin Philharmonie, Germany' (2021) [A. Cleare]

'Performance of on magnetic fields by Musikfabrik, Berlin Philharmonie, Germany' (2021) [A. Cleare]

'Performance of Inner by House of Fire, Neighborhood Unitarian Church, California, USA' (2021) [A. Cleare]

'Inner for cello and piano, performance by Louise McMonagle and Neil Georgeson, Music and Wine at St. Luke's, Brighton, UK' (2022) [A. Cleare]

'I am not a clockmaker either for piano and electronics, performance by Isabelle O'Connell, New Music Dublin, National Concert Hall, Ireland' (2022) [A. Cleare]

'93 million miles away for violin, cello, and piano, performed by Collegium Novum Zürich, Museum für Gestaltung, Zürich, Switzerland' (2022) [A. Cleare]

'Fossil Lights for quartet, performance by Musikfabrik, National Concert Hall, Dublin, Ireland' (2022) [A. Cleare]

'Fossil lights for quartet, performance by Musikfabrik, Studio Musikfabrik, Cologne, Germany' (2022) [A. Cleare]

'Eyam i (it takes an ocean not to) for solo Bb clarinet, performance by Carlos Cardeiro, University of Music Chamber Hall, Freiburg, Germany' (2022) [A. Cleare]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Performance of where cobalt waves live by Emma Mistele, Yarn/Wire Institute, DiMenna Centre, New York, USA' (2022) [A. Cleare]
- 'Inner for cello and piano, performance by Trio Feedback and ARTSOM, Mostra Sonora, València, Spain' (2022) [A. Cleare]
- 'Fiáin for string quintet, performance by Crash Ensemble, West Cork Chamber Festival, Cork, Ireland' (2022) [Ann Cleare]
- 'Performance of Inner for cello and piano by Tempus Konnex, Leipzig, Germany' (2022) [A. Cleare]
- 'Performance of I am not a clockmaker either for piano and electronics, by Ensemble Suono Giallo, Il Suono Contemporary Music Week, Auditorium Santa Chiara Sansepolcro, Tuscany, Italy' (2022) [A. Cleare]
- Dowling, William*, 'Inertial magnetization dynamics of ferromagnetic nanoparticles including thermal agitation', *Proc. SPIE 11805, Spintronics XIV, SPIE Spintronics XIV*, San Diego, California, USA, SPIE (2021), <https://doi.org/10.1117/12.2598253> [S.V. Titov, W.T. Coffey, W.J. Dowling, Y.P. Kalmykov, M. Zarifakis, A.S. Titov]
- 'Ferromagnetic and nutation resonance frequencies of nanomagnets with various magnetocrystalline anisotropies', *J. Appl. Phys*, 131 (2022), <https://doi.org/10.1063/5.0093226> [S.V. Titov, W.J. Dowling, Y.P. Kalmykov]
- 'Nutation spin waves in ferromagnets', *Phys. Rev. B*, 105, 21 (2022), 214414-1-214414-9 [S.V. Titov, W.J. Dowling, Y.P. Kalmykov, M. Cherkasskii]
- 'Inertial dynamics and equilibrium correlation functions of magnetisation at short times', *Physical Review B*, 107, 10 (2023), 104416-1-104416-11 [S.V. Titov, W.J. Dowling, A.S. Titov, S.A. Nikitov, M. Cherkasskii]
- Eadie, Jimmy*, 'The aesthetics of turntable art', *Leonardo Music Journal*, 55, 1 (2022) [J. Eadie]
- 'Embodied aurality within somatic art', *Designing interactions for music and sound*, ed M. Filmowicz, New York, Taylor and Francis (2022) [J. Eadie]
- 'Études', diatribe records (2022) [J. Eadie, K. Volans, J. Richards]
- 'Audiowalk-an improvised geo-locative installation', *Organised Sound*, 26, 1 (2021) [J. Eadie]
- 'Chekhov's first play', Project Arts Centre, Dublin, Ireland (2022) [J. Eadie with Dead Centre]
- 'Chekhov's first play', Mess Festival, Sarajevo, Bosnia and Herzegovina (2021) [J. Eadie with Dead Centre]
- 'Cascando', NYU Skirball, New York, (2022) [J. Eadie with Pan Pan Theatre]
- 'Cascando', Project Arts Centre, Dublin, Ireland, Culture Ireland (2022) [J. Eadie]
- 'Chekhov's first play', Irish Arts Center 726 11th Avenue Hell's Kitchen, NYC, USA, Culture Ireland (2022) [J. Eadie with Dead Centre]
- 'Mespil in the dark (live)', Samuel Beckett Theatre, Dublin, Ireland, Culture Ireland (2022) [J. Eadie with Pan Pan Theatre]
- 'Goodnight sweetheart', (2022) [J. Eadie, Kaukaurao–Aaresi, Li'eresi]
- 'Audial kinetics and the disembodied voice', *Interactivity and Game Creation, EAI ArtsIT 2022-11th EAI International Conference*, Faro, Lisbon, Portugal, Springer (2022), 200-215 [J. Eadie]
- 'Identity and the interdisciplinary practice of theatre sound design', *Sonic art and music, eleventh international conference, music and sonic art: sounding identities*, Middlesex University, London, UK, Royal Music Association (2022), 15-30 [J. Eadie]
- 'Sounding Beckett: a practitioner's perspective', *Theatre and Performance Design*, 8, 3-4 (2023), 170-188 [J. Eadie]
- Katsenou, Angeliki*, 'Study of compression statistics and prediction of rate-distortion curves for video texture', *Signal processing: image communication*, 101 (2022), 116551 [A.V. Katsenou, M. Afonso, D.R. Bull]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'Efficient bitrate ladder construction for content-optimized adaptive video streaming', *IEEE Open Journal of Signal Processing*, 2 (2021), 496-511 [A.V. Katsenou, J. Sole, D. Bull]

'VMAF-based bitrate ladder estimation for adaptive streaming', *2021 Picture Coding Symposium, PCS 2021–Proceedings* (2021), dx.doi.org/10.1109/PCS50896.2021.9477469 [A. Katsenou, F. Zhang, K. Swanson, M. Afonso, J. Sole, D.R. Bull]

**King, Justin**, 'Analysis of underlap strained silicon on insulator MOSFET for accurate and compact modeling', *Silicon*, 14, 6 (2022), 2793-2801 [R. Sharma, A.K. Rana, S. Kaushal, J.B. King, A. Raman]

'Memory polynomial based support vector regression dynamic behavioral model for Doherty power amplifiers', *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, 35, 4 (2022), <http://dx.doi.org/10.1002/jnm.2985> [S. Wang, J. King, J. Cai]

'Stochastic optimization of the CPL-function-based model for RF power transistors', *IEEE Microwave and Wireless Components Letters*, 32, 7 (2022), 867-870 [J. Cai, J.B. King, S. Chen, B. You, W. Li, J. Liu]

'Design of a multi-octave power amplifier using broadband load-pull X-parameters', *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, 34, 5 (2021), <http://dx.doi.org/10.1002/jnm.2878> [M. Wu, J. Cai, J. King, S. Chen, J. Su, W. Cao]

'Dynamic behavioral modeling of RF power amplifiers based on decomposed piecewise machine learning technique', *International Journal of Microwave and Wireless Technologies*, 13, 4 (2021), 315-321 [J. Cai, J.B. King, C. Yu, B. Pan, L. Sun, J. Liu]

'Efficient energy-conservative dispersive transistor modelling using discrete-time convolution and artificial neural networks', *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, 34, 5 (2021), <http://dx.doi.org/10.1002/jnm.2894> [J.B. King]

'Modified small-signal behavioral model for GaN HEMTs based on support vector regression', *International Journal of RF and Microwave Computer-Aided Engineering*, 31, 9 (2021), <http://dx.doi.org/10.1002/mmce.22774> [M. Geng, J. Cai, J. King, B. You, J. Su, J. Liu, L. Sun, W. Cao, M. Pan]

'Pade-approximation based behavioral modeling for RF power amplifier design', *IEEE Access*, 9 (2021), 18904-18914 [C. Wilson, A. Zhu, J. Cai, J.B. King]

**Marchetti, Nicola**, 'Evolving intelligent reflector surface toward 6G for public health: application in airborne virus detection', *IEEE Network*, 35, 5 (2021), 306-312 [H. Siljak, N. Ashraf, M. Taynnan (...), N. Marchetti, S. Balasubramaniam]

'Directional modulation from a wrist-wearable compact antenna', *16th European conference on antennas and propagation*, Madrid, Spain, IEEE (2022), <http://hdl.handle.net/2262/97921> [Abel Zandamela, Nicola Marchetti, Adam Narbudowicz]

'Stacked-patch MIMO antenna for dual-plane beamsteering', *2021 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting (APS/URSI)*, Singapore (2022), <http://hdl.handle.net/2262/97923> [A. Zandamela, N. Marchetti, A. Narbudowicz]

'Optimal embedding of heterogeneous RAN slices for secure and technology-agnostic RANaaS', *IEEE Transactions on Network and Service Management*, 19, 4 (2022), 5284-5298 [J.F. Santos, D. da Silva Brilhante, J.F. de Rezende, N. Marchetti, M. Ruffini, L.A. DaSilva]

'Spherical modes driven directional modulation with a compact MIMO antenna', *IEEE Antennas and Wireless Propagation Letters*, 22, 3 (2023), 477-481 [A. Zandamela, N. Marchetti, M. Ammann, A. Narbudowicz]

'Objective supervised machine learning-based classification and inference of biological neuronal networks', *Molecules*, 27, 19 (2022) [M.T. Barros, H. Siljak, P. Mullen, C. Papadias, J. Hyttinen, N. Marchetti]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'On the performance of mobile cellular-connected drones under practical antenna configurations', *IEEE Transactions on Vehicular Technology*, 71, 7 (2022), 7548-7560 [R. Amer, M. Baza, B. Galkin, A. Alourani, N. Marchetti]
- 'Applying intelligent reflector surfaces for detecting violent expiratory aerosol cloud using terahertz signals', *IEEE Network* (2022), 1-8 [H. Siljak, M.T. Barros, N. D'Arcy, D.P. Martins, N. Marchetti, S. Balasubramaniam]
- 'Resource reservation in sliced networks: an explainable artificial intelligence (XAI) approach', *IEEE International Conference on Communications (ICC)* (2022), 1530-1535 [P. Barnard, I. Macaluso, N. Marchetti, L.A. Dasilva]
- 'Robust network intrusion detection through explainable artificial intelligence (XAI)', *IEEE Networking Letters*, 4, 3 (2022), 167-171 [P. Barnard, N. Marchetti, L. DaSilva]
- 'Intelligent dynamic indoor aerosol sensing using terahertz band wireless communication systems', *IEEE Networking Letters*, 4, 4 (2022), 184-188 [H. Siljak, M. Barros, L. Cooke, N. Marchetti]
- 'Angle of arrival estimation via small IoT devices: miniaturized arrays vs. MIMO antennas', *IEEE Internet of Things Magazine*, 5, 2 (2022), 146-152 [A. Zandamela, A. Chiumento, N. Marchetti, A. Narbudowicz]
- 'Dimensioning spectrum to support ultra-reliable low-latency communication', *IEEE Communications Standards Magazine*, 7, 1 (2023), 88-93 [A. Gomes, J. Kibilda, N. Marchetti, L. Da Silva]
- 'Artificial intelligence for dynamical systems in wireless communications: modeling for the future', *IEEE Systems, Man, and Cybernetics Magazine*, 7, 4 (2021), 13-23 [H. Siljak, I. Macaluso, N. Marchetti]
- 'Space-time- and frequency- spreading for interference minimization in dense IoT', *IEEE Internet of Things Magazine*, 6, 1 (2023), 148-153 [I. Dey, N. Marchetti]
- McDonnell, Maura**, 'Inventing instruments: colour-tone correspondence to colour-music performance (pre-1900)', *Live visuals history, theory, practice*, eds S. Gibson, S. Arisona, D. Leishman, A. Tanaka, London, Routledge (2022), 9-40 [M. McDonnell]
- 'Punto Y raya festival 2021, abstract art in motion', *Digital alchemy*, Spain, Barcelona (2021) [M. McDonnell]
- 'Jack B. Yeats AR and other art music', National Concert Hall, Ireland (2022) [S. Rudenko, M. McDonnell, M. Haahr]
- O'Loughlin, Declan**, 'A novel sophisticated form of DMAS beamformer: application to breast cancer detection', *Biomedical Signal Processing and Control*, 74 (2022), <http://dx.doi.org/10.1016/j.bspc.2022.103516> [S.A.S. Karam, B.A. Mohammadzadeh]
- 'Identifying microwave antenna design limitations for radar-based breast imaging', *2022 International Workshop on Antenna Technology (iWAT)*, Dublin, Ireland (2022), <http://hdl.handle.net/2262/101296> [H. Benchakroun, D. O'Loughlin]
- 'Probe contact force monitoring during conductivity measurements of the left atrial appendage to support the design of novel diagnostic and therapeutic procedures', *MDPI Sensors*, 22, 19 (2022), 7171 [H. Benchakroun, N. Istuk, E. Dunne, M. Adnan Elahi, T. O'Halloran, M. O'Halloran, D. O'Loughlin]
- 'Design of a tetrapolar probe for electrical characterization of the left atrial appendage from 0.1 Hz to 100 kHz', *IEEE Sensors Journal* (2022), <http://hdl.handle.net/2262/101531> [H. Benchakroun, N. Istuk, E. Dunne, A. Elahi, T. O'Halloran, M. O'Halloran, D. O'Loughlin]
- 'Pathway to demonstrating clinical efficacy of microwave breast imaging: qualitative and quantitative performance assessment', *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology*, 6, 4 (2022), 439-448 [E. Porter, D. O'Loughlin]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- Panarin, Yuri**, 'Switching in a biaxial smectic a - like phase', *Liquid Crystals Today*, 30, 2 (2021), 20-25 [Y.P. Panarin, C. Tschierske, J.K. Vij]
- 'Electrooptic, pyroelectric, dielectric spectroscopic studies of nematic and twist-bend nematic phases of achiral hockey-shaped bent-core liquid crystal', *Journal of Molecular Liquids*, 351(2022), 1-11 [S.P. Sreenilayam, Neelam Yadav, Y. P. Panarin, G. Shanker and Jagdish K Vij]
- Perova, Tatiana**, 'Optical characterizations of novel composite and optically active materials. Editorial', *Materials*, 13 (2021), 5263/1-5263/4 [T. Perova]
- 'Electrospun fibres of chitosan/PVP for the effective chemotherapeutic drug delivery of 5-fluorouracil', *Chemosensors*, 9, 4 (2021), 70/1-70/19 [J. Grant, S. Pillai, S. Hehir, T.S. Perova, S. Hinder, M. McCafee, A. Breen]
- 'Concentration-dependent fluorescence emission of quercetin', *Chemosensors*, 9, 11 (2021), 315/1-315/10 [T. Prutskij, A. Deriabina, F.J. Melendez, M.E. Castro, L. Castillo Trejo, G.D. Vazquez Leon, E. Gonzalez, T.S. Perova]
- 'MoS<sub>2</sub>/carbon heterostructured catalysts for the hydrogen evolution reaction: N-doping modulation of substrate effects in acid and alkaline electrolytes', *Carbon*, 202, 2 (2023), 70-80 [H. Nolan]
- 'Mechanism of liquid-phase metal infiltration into pyridine-containing polymeric thin films', *Materials Letters*, 313, 131682 (2022), 1-4 [A.E. Paiva; J.F. Baez Vasquez, T.S. Perova; F.G.L. M. Borsagli, M. Morris]
- 'Formation of gold nanoparticle self-assembling films in various polymer matrices for sers substrates', *Materials*, 15, 5197 (2022), 1-16 [K.A. Maleeva, I.E. Kaliya, A.P. Tkach (...), T.A. Perova et al.]
- Shanker, Shreejith**, 'Heterogeneous communication virtualization for distributed embedded applications', *Euromicro conference on Digital System Design (DSD)*, Palermo, Italy, IEEE (2021), 10.1109/DSD53832.2021.00047 [T.H. Pham, S. Shreejith, S. Steinhorst, S.A. Fahmy, S. Chakraborty]
- 'A lightweight multi-attack CAN intrusion detection system on hybrid FPGAs', *International conference on Field Programmable Logic and applications (FPL)*, Belfast, UK (2022), <http://hdl.handle.net/2262/99602> [S. Khandelwal, S. Shreejith]
- Siljak, Harun**, 'Objective supervised machine learning-based classification and inference of biological neuronal networks', *Molecules*, 27, 19 (2022) [M.T. Barros, H. Siljak, P. Mullen, C. Papadias, J. Hyttinen, N. Marchetti]
- 'Applying intelligent reflector surfaces for detecting violent expiratory aerosol cloud using terahertz signals', *IEEE Network* (2022), 1-8 [H. Siljak, M.T. Barros, N. D'Arcy, D.P. Martins, N. Marchetti, S. Balasubramaniam]
- 'Intelligent dynamic indoor aerosol sensing using terahertz band wireless communication systems', *IEEE Networking Letters*, 4, 4 (2022), 184-188 [H. Siljak, M. Barros, L. Cooke, N. Marchetti]
- 'Rigorous interpretation of engineering formulae for the convolution and the fourier transform based on the generalized integral', *IEEE Access*, 10 (2022), 29451-29460 [J. Zeljko, S. Harun]
- 'The codex of Bosnian SF', *Arab and Muslim Science Fiction: Critical Essays*, 74 (2022), 194- [S. Harun]
- 'Networks of twin peaks: the Dale Cooper effect', *The Mathematical Intelligencer* (2022), 1-7 [S. Harun]
- 'Artificial intelligence for dynamical systems in wireless communications: modeling for the future', *IEEE Systems, Man, and Cybernetics Magazine*, 7, 4 (2021), 13-23 [H. Siljak, I. Macaluso, N. Marchetti]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

Vij, Jagdish, 'Various liquid crystalline phases structural analysis using resonant x-ray scattering', *EKISHO*, 26, 4 (2022), 242-253 [Y. Takanishi, A. Iida, I. Nishiyama, Jagdish K. Vij, Atsuo Fukuda]

Yadav, Neelam, 'Electrooptic, pyroelectric, dielectric spectroscopic studies of nematic and twist-bend nematic phases of achiral hockey-shaped bent-core liquid crystal', *Journal of Molecular Liquids*, 351 (2022), 1-11 [S.P. Sreenilayam, Neelam Yadav, Y.P. Panarin, G. Shanker, J.K. Vij]

'Impedance spectroscopy', *Modern Techniques of Spectroscopy* (2021), 515–540 [N. Yadav, R. Dhar]

'Liquid crystalline materials for efficient solar energy harvesting', *Unconventional Liquid Crystals and Their Applications* (2021), 211-238 [N. Yadav, R. Dhar]

'Chemical and physical aspects of recent bent-shaped liquid crystals exhibiting chiral and achiral mesophases', *Liquid Crystals*, 49, 7-9 (2022), 1078-1146 [S. Kaur, V. Punjani, N. Yadav, A. Barthakur, A. Baghla, S. DHara, S.K. Pal]

'Two mechanisms for the formation of the ferronematic phase studied by dielectric spectroscopy', *Journal of Molecular Liquids*, 378 (2023), 121570 [N. Yadav, Y.P. Panarin, J.K. Vij, W. Jiang, G.H. Mehl]

'Spontaneous mirror symmetry breaking and chiral segregation in the achiral ferronematic compound DIO', *Physical Chemistry Chemical Physics*, 25, 13 (2023), 9083-9091 [N. Yadav, Y.P. Panarin, W. Jiang, G. Mehl, J.K. Vij]

### Research student

Ringis, Daniel Joseph, 'Near optimal per-clip Lagrangian multiplier prediction in HEVC', *2021 Picture Coding Symposium (PCS)* (2021), <http://dx.doi.org/10.1109/pcs50896.2021.9477476> [D.J. Ringis, F. Pitie, A. Kokaram]

'Per-clip and per-bitrate adaptation of the Lagrangian multiplier in video coding', *Applications of Digital Image Processing XLIV* (2021), <http://dx.doi.org/10.1117/12.2593238> [D.J. Ringis, F. Pitie, A.C. Kokaram]

## MECHANICAL, MANUFACTURING AND BIOMEDICAL ENGINEERING

Ahearne, Mark, 'Hydrogels as emerging materials for cornea wound healing', *Small*, 17, 30 (2021), <http://dx.doi.org/10.1002/sml.202006335> [S. Khosravimelal, M. Mobaraki, S. Eftekhari, M. Ahearne, A.M. Seifalian, M. Gholipourmalekabadi]

'Multilayered fabrication assembly technique to engineer a corneal stromal equivalent', *Bio-protocol*, 11, 6 (2021), <http://dx.doi.org/10.21769/BioProtoc.3963> [J. Fernandez-Perez, P.W. Madden, W. Ahearne]

'Influence of spiral topographies on human limbal-derived immortalized corneal epithelial cells', *Experimental Eye Research*, 225, 109252 (2022), <http://dx.doi.org/10.1016/j.exer.2022.109252> [P. Bhattacharjee, M. Ahearne]

'Direct exchange of perfluoro-carbon liquid for silicone oil - a surgical technique to control pressure and avoid retinal slippage', *Retina (Philadelphia, Pa.)* (2022), <http://dx.doi.org/10.1097/iae.0000000000003422> [M.P. Treacy, M.P. Conway, M. Al Hammoud, E.S. Duignan, M. Ahearne, E. Ezra]

'Mechanical testing of hydrogels', *The mechanics of hydrogels: mechanical properties, testing, and applications*, eds H. Li; V.V. Silberschmidt, Woodhead Publishing (2022), 73-90 [M. Ahearne]

'Silk fibroin based interpenetrating network hydrogel for corneal stromal regeneration', *International Journal of Biological Macromolecules*, 223 (2022), 583-594 [P. Bhattacharjee, M. Ahearne]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- Bennett, Gareth**, 'Surrogate-based optimization with adaptive parallel infill strategy enhanced by inaccurate multi-objective search', *Engineering Optimization* (2021), <http://dx.doi.org/10.1080/0305215X.2021.1928109> [W. Wang, Z. Wu, D. Wang, P. Wang, W. Zhang, P.N. Okolo, G.J. Bennett]
- 'Aeroacoustics research in Europe: the CEAS-ASC report on 2020 and 2021 highlights', *Journal of Sound and Vibration*, 534(2022), 117002 [A. Balázs Nagy, J. Delfs, G.J. Bennett]
- 'Flow control and passive low noise technologies for landing gear noise reduction', *28th AIAA/CEAS Aeroacoustics Conference*, Southampton, UK, AIAA (2022), <http://dx.doi.org/10.2514/6.2022-2848> [G.J. Bennett, J. Lai, G. O'Brien, D. Ragni, F. Avallone, M. Pott-Pollenske]
- 'Multi-chamber micro-perforated panel absorbers optimised for high amplitude broadband absorption using a two-point impedance method', *Journal of Sound and Vibration*, 547 (2023), 117527 [J. Wang, G.J. Bennett]
- 'Design considerations to fabricate multifunctional superomniphobic surfaces: a review', *Vacuum*, 209 (2023), 111758 [J. Verma, G.J. Bennett, S. Goel]
- 'Fan-noise reduction of data centre telecommunications-server racks, with an acoustic metamaterial broadband, low-frequency sound-absorbing liner', *Applied Acoustics*, 203 (2023), 109229 [J. Killeen, I. Davis, J. Wang, G.J. Bennett]
- Buckley, Conor**, 'Consolidating and re-evaluating the human disc nutrient microenvironment', *JOR Spine*, 5, 1 (2022), <http://dx.doi.org/10.1002/jsp2.1192> [E.E. McDonnell, C.T. Buckley]
- 'Bilayered extracellular matrix derived scaffolds with anisotropic pore architecture guide tissue organization during osteochondral defect repair', *Acta Biomaterialia*, 143 (2022), 266-281 [D.C. Browe, P.J. Diaz-Payno, F.E. Freeman (...), C.T. Buckley *et al.*]
- 'Effects of growth factor combinations TGFβ3, GDF5 and GDF6 on the matrix synthesis of nucleus pulposus and nasoseptal chondrocyte self-assembled microtissues', *Applied Sciences (Switzerland)*, 12, 3 (2022), <http://hdl.handle.net/2262/98939> [S. Samuel, E.E. McDonnell, C.T. Buckley]
- 'Multi-factorial nerve guidance conduit engineering improves outcomes in inflammation, angiogenesis and large defect nerve repair', *Matrix Biology*, 106 (2022), 34-57 [A.J. Hibbitts, Z. Kočí, S. Kneafsey (...), C.T. Buckley *et al.*]
- 'Rat tail models for the assessment of injectable nucleus pulposus regeneration strategies', *JOR Spine* (2022) [M.N. Barcellona, E.E. McDonnell, S. Samuel, C.T. Buckley]
- 'Two-and three-dimensional *in vitro* nucleus pulposus cultures: an *in silico* analysis of local nutrient microenvironments', *JOR Spine* (2022), <http://dx.doi.org/10.1002/jsp2.1222> [E.E. McDonnell, C.T. Buckley]
- 'Promoting endogenous articular cartilage regeneration using extracellular matrix scaffolds', *Materials Today Bio*, 16 (2022), <http://dx.doi.org/10.1016/j.mtbio.2022.100343> [D.C. Browe, R. Burdis, P.J. Diaz-Payno, F.E. Freeman, J.M. Nulty, C.T. Buckley, P.A.J. Brama, D.J. Kelly]
- Hoey, David**, 'An ECM-mimetic hydrogel to promote the therapeutic efficacy of osteoblast-derived extracellular vesicles for bone regeneration', *Frontiers in Bioengineering and Biotechnology*, 10 (2022), 829969 [K. Man, M.Y. Brunet, A.S. Federici, D.A. Hoey, S.C. Cox]
- 'How to design, develop and build a fully-integrated melt electrowriting 3D printer', *Additive Manufacturing*, 58 (2022), <http://dx.doi.org/10.1016/j.addma.2022.102998> [K.F. Eichholz, I. Goncalves, X. Barcelo, A.S. Federici, D.A. Hoey, D.J. Kelly]
- 'Surface free energy dominates the biological interactions of postprocessed additively manufactured Ti-6Al-4V', *ACS Biomaterials Science and Engineering* (2022) [V.M. Villapun Puzas, L.N. Carter, C. Schroder (...), D.A. Hoey *et al.*]
- 'Scaffold microarchitecture regulates angiogenesis and the regeneration of large bone defects', *Biofabrication*, 14, 4 (2022), <http://dx.doi.org/10.1088/1758-5090/ac88a1> [K.F. Eichholz, F.E. Freeman, P. Pitacco (...), D.A. Hoey, D.J. Kelly]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'The pros and cons of fatigue loading of bone', *1. Perspectives on the mechanics of fracture and biological materials*, eds D. Hoey, O. Kennedy, LuLu Publishing (2022), 55-65 [D.A. Hoey]
- 'Wanted dead or alive: skeletal structure alteration of cold-water coral *Desmophyllum pertusum* (*Lophelia pertusa*) from anthropogenic stressors', *Oceans*, 4, 1 (2023), 68-79 [E.T. Krueger, J.V. Büscher, D.A. Hoey, P.J. Taylor, P.J. O'Reilly, Q.G. Crowley]
- Kelly, Daniel, 'Bilayered extracellular matrix derived scaffolds with anisotropic pore architecture guide tissue organization during osteochondral defect repair', *Acta Biomaterialia*, 143 (2022), 266-281 [D.C. Browe, P.J. Diaz-Payno, F.E. Freeman (...), P.A.J. Brama, D.J. Kelly]
- 'How to design, develop and build a fully-integrated melt electrowriting 3D printer', *Additive Manufacturing*, 58 (2022), <http://dx.doi.org/10.1016/j.addma.2022.102998> [K.F. Eichholz, I. Goncalves, X. Barcelo, A.S. Federici, D.A. Hoey, D.J. Kelly]
- 'Promoting endogenous articular cartilage regeneration using extracellular matrix scaffolds', *Materials Today Bio*, 16 (2022), <http://dx.doi.org/10.1016/j.mtbio.2022.100343> [D.C. Browe, R. Burdis, P.J. Diaz-Payno, F.E. Freeman, J.M. Nulty, C.T. Buckley, P.A.J. Brama, D.J. Kelly]
- 'Spatial patterning of phenotypically distinct microtissues to engineer osteochondral grafts for biological joint resurfacing', *Biomaterials*, 289, 121750 (2022), <http://dx.doi.org/10.1016/j.biomaterials.2022.121750> [R. Burdis, F. Chariyev-Prinz, D.C. Browe (...), P. Brama, D.J. Kelly]
- 'Fused filament fabrication of polycaprolactone bioscaffolds: influence of fabrication parameters and thermal environment on geometric fidelity and mechanical properties', *Bioprinting*, 27, e00206 (2022), <http://dx.doi.org/10.1016/j.bprint.2022.e00206> [R. Paetzold, F.B. Coulter, G. Singh, D.J. Kelly, E.D. O'Ceirbhail]
- 'Gremlin-1 suppresses hypertrophy of engineered cartilage *in vitro* but not bone formation *in vivo*', *Tissue engineering - part A*, 28, 15-16 (2022), 724-736 [P.J. Diaz-Payno, D.C. Browe, F.E. Freeman, J. Nulty, R. Burdis, D.J. Kelly]
- 'Local depletion of proteoglycans mediates cartilage tissue repair in an *ex vivo* integration model', *Acta Biomaterialia*, 149 (2022), 179-188 [N.G. Merrild, V. Holzmann, Y. Ariosa-Morejon (...), D.J. Kelly *et al.*]
- 'Scaffold microarchitecture regulates angiogenesis and the regeneration of large bone defects', *Biofabrication*, 14, 4 (2022), <http://dx.doi.org/10.1088/1758-5090/ac88a1> [K.F. Eichholz, F.E. Freeman, P. Pitacco (...), D.A. Hoey, D.J. Kelly]
- 'Tuning the degradation rate of alginate-based bioinks for bioprinting functional cartilage tissue', *Biomedicines*, 10, 7 (2022), <http://dx.doi.org/10.3390/biomedicines10071621> [X. Barcelo, K.F. Eichholz, O. Garcia, D.J. Kelly]
- 'Soft hydrogel environments that facilitate cell spreading and aggregation preferentially support chondrogenesis of adult stem cells', *Macromolecular Bioscience*, 22, 6 (2022), <http://dx.doi.org/10.1002/mabi.202100365> [P. Aprile, I.T. Whelan, B.N. Sathy, S.F. Carroll, D.J. Kelly]
- '3D bioprinting of cartilaginous templates for large bone defect healing', *Acta Biomaterialia* (2022), <http://dx.doi.org/10.1016/j.actbio.2022.07.037> [P. Pitacco, J.M. Sadowska, F.J. O'Brien, D.J. Kelly]
- '3D extrusion bioprinting', *Nature Reviews Methods Primers*, 1, 1 (2021), <http://dx.doi.org/10.1038/s43586-021-00073-8> [Y.S. Zhang, G. Haghighashtiani, T. Hubscher (...), D.J. Kelly *et al.*]
- 'Anthropomorphic calcaneus phantom for microwave bone imaging applications', *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology*, 5, 3 (2021), 206-213 [B. Amin, A. Shahzad, D. Kelly, M. O'Halloran, M. Adnan Elahi]
- 'Bioprinting of structurally organized meniscal tissue within anisotropic melt electrowritten scaffolds', *Acta Biomaterialia*, 158 (2023), 216-227 [X. Barcelo, K.F. Eichholz, I.F. Goncalves, O. Garcia, D.J. Kelly]
- 'Macrophage metabolic profile is altered by hydroxyapatite particle size', *Acta Biomaterialia* (2023), <http://dx.doi.org/10.1016/j.actbio.2023.01.058> [L.C. Shanley, O.R. Mahon, S.A. O'Rourke, N.G.B. Neto, M.G. Monaghan, D.J. Kelly, A. Dunne]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Biofabrication of poly(glycerol sebacate) scaffolds functionalized with a decellularized bone extracellular matrix for bone tissue engineering', *Bioengineering*, 10, 1 (2023), <http://dx.doi.org/10.3390/bioengineering10010030> [S. Guler, K. Eichholz, F. Chariyev-Prinz, P. Pitacco, H.M. Aydin, D.J. Kelly, Å Vargel]
- 'Evaluation of a co-culture of rapidly isolated chondrocytes and stem cells seeded on tri-layered collagen-based scaffolds in a caprine osteochondral defect model', *Biomaterials and Biosystems*, 8, 100066 (2022), <http://dx.doi.org/10.1016/j.bbiosy.2022.100066> [T.J. Levingstone, E.J. Sheehy, C.J. Moran (...), D.J. Kelly *et al.*]
- '3D organ-on-a-chip: The convergence of microphysiological systems and organoids', *Frontiers in Cell and Developmental Biology*, 10, 1043117 (2022), <http://dx.doi.org/10.3389/fcell.2022.1043117> [L.S. Baptista, C. Porri, G.S. Kronemberger, D.J. Kelly, C.M. Perrault]
- Kennedy, John**, 'Efficient modelling of acoustic metamaterials for the performance enhancement of an automotive silencer', *Acoustics*, 4, 2 (2022), 329-344 [D. Deery, L. Flanagan, G. O'Brien, H.J. Rice, J. Kennedy]
- 'Effect of a modified energy density equation to achieve a more uniform energy input during LPBF for improved repeatability', *Journal of Manufacturing Processes*, 77 (2022), 607-615 [L. Dowling, J. Kennedy, D. Trimble]
- 'UAV noise emission - a combined experimental and numerical assessment', *Acoustics*, 4, 2 (2022), 297-312 [K. Cussen, S. Garruccio, J. Kennedy]
- 'The impact of additive manufacturing on the acoustic performance of novel porous materials', *28th AIAA/CEAS Aeroacoustics conference*, Southampton, UK (2022), <http://hdl.handle.net/2262/100331> [A. Ciochon, J. Kennedy, R. Leiba, L. Flanagan]
- Lally, Caitriona**, 'Microstructural and mechanical insight into atherosclerotic plaques: an ex vivo DTI study to better assess plaque vulnerability', *Biomechanics and Modeling in Mechanobiology* (2023), <http://dx.doi.org/10.1007/s10237-022-01671-5> [B. Tornifoglio, R.D. Johnston, A.J. Stone, C. Kerskens, C. Lally]
- 'Ex vivo study using diffusion tensor imaging to identify biomarkers of atherosclerotic disease in human cadaveric carotid arteries', *Arteriosclerosis, Thrombosis, and Vascular Biology*, 42, 11 (2022), 1398-1412 [B. Tornifoglio, A.J. Stone, C. Kerskens, C. Lally]
- 'Inverse material parameter estimation of patient-specific finite element models at the carotid bifurcation: the impact of excluding the zero-pressure configuration and residual stress', *International Journal for Numerical Methods in Biomedical Engineering*, 39, 1 (2023), <http://dx.doi.org/10.1002/cnm.3663> [R.D. Johnston, M. Ghasemi, C. Lally]
- Lupoi, Rocco**, 'Altered phase transformation behaviors and excellent bending shape memory property of NiTi shape memory alloy via selective laser melting', *Journal of Materials Processing Technology*, 303 (2022), 117546 [H.Z. Lu, H.W. Ma, W.S. Cai, X. Luo, S.G. Qu, J. Wang, R. Lupoi, S. Yin, C. Yang]
- 'Powder reuse in laser-based powder bed fusion of Ti6Al4V-changes in mechanical properties during a powder top-up regime', *Materials*, 15, 6 (2022), 1-12 [R. Harkin, H. Wu, S. Nikam, S. Yin, R. Lupoi, W. McKay, P. Walls, J. Quinn, S. McFadden]
- 'Mechanical and fatigue properties of diamond-reinforced Cu and Al metal matrix composites prepared by cold spray', *Journal of Thermal Spray Technology*, 31(2022), 217-233 [O. Kovarik, J. Cizek, S. Yin, R. Lupoi, M. Janovska, J. Cech, J. Capek, J. Siegl, T. Chraska]
- 'Influence of processing parameters on density, surface morphologies and hardness of as-built Ti-5Al-5Mo-5V-3Cr alloy manufactured by selective laser melting', *Journal of Alloys and Compounds*, 910(2022), 164760 [M. Ahmed, M.A. Obeidi, S. Yin, R. Lupoi]
- 'Cold spray: over 30 years of development toward a hot future', *Journal of Thermal Spray Technology*, 31 (2022), 866-907 [D. Guo, M. Kazasidis, A. Hawkins (...), R. Lupoi, B. Jodoin]
- 'Abrasion power of Ti and Ni diamond-coated coatings deposited by cold spray', *Metals*, 12, 7 (2022), 1197 [R. Sesana, R. Lupoi, I. Pessolano Filis, P. Yu, S. Rizzo]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'The analysis of small-scale notches on the fatigue performance of SLM Ti-6Al-4V; a theory of critical distances approach', *Key Engineering Materials*, 926 (2022), 250-267 [B. Gillham, A. Yankin, H. Shipley (...), D. Taylor, R. Lupoi]
- 'Correction to: Cold spray: over 30 years of development toward a hot future (Journal of Thermal Spray Technology, (2022), 31, 4, (866-907), 10.1007/s11666-022-01366-4)', *Journal of Thermal Spray Technology*, 31, 7 (2022), 2244 [D. Guo, M. Kazasidis, A. Hawkins (...), R. Lupoi, B. Jodoin]
- 'Microstructure, shape memory properties, and *in vitro* biocompatibility of porous NiTi scaffolds fabricated via selective laser melting', *Journal of Materials Processing Technology*, 15 (2022), 6797-6812 [H.Z. Lu, H.W. Ma, X. Luo, Y. Wang, J. Wang, R. Lupoi, S. Yin, C. Yang]
- 'Microstructural, mechanical and wear behavior of HVOF 3 and cold-sprayed High-Entropy Alloys (HEAs) coatings', *Journal of Thermal Spray Technology*, 31 (2022), 1184-1206 [A. Silvello, P. Cavaliere, S. Yin, R. Lupoi, I. Garcia Cano, S. Dosta]
- 'Microstructure and tribological properties of Al<sub>2</sub>O<sub>3</sub> reinforced FeCoNiCrMn high entropy alloy composite coatings by cold spray', *Surface and Coatings Technology*, 434 (2022), 128205 [Y. Zou, Z. Qiu, C. Huang, D. Zeng, R. Lupoi, N. Zhang, S. Yin]
- 'Microstructural and mechanical optimization of selective laser melted Ti<sub>6</sub>Al<sub>4</sub>V lattices: effect of hot isostatic pressing', *Journal of Manufacturing Processing*, 77 (2022), 151-162 [X. Yan, S. Yue, J. Ge, C. Chen, R. Lupoi, S. Yin]
- 'Improvement of tensile strength of cold sprayed Fe deposits via in-process powder preheating', *Materials Letters*, 316 (2022), 132090 [S. Yin, Y. Xie, N. Fan, J. Yang, W. Li, R. Lupoi, X. Guo, R. Huang]
- 'Metal additive manufacturing via a novel composite material using powder and polymers formed in sheets', *CIRP Annals - Manufacturing Technology*, 71 (2022), 181-184 [R. Lupoi, W.M. Abbott, R. Senthamarakannan, S. McConnell, J. Connolly, S. Yin, R. Babu Padamati]
- 'On the application of the anisotropic enhanced thermal conductivity approach to thermal modelling of laser-based powder bed fusion processes', *Additive Manufacturing*, 55 (2022), 102870 [S. Nikam, H. Wu, R. Harkin, J. Quinn, R. Lupoi, S. Yin, S. McFadden]
- 'Fabrication of Ta-Ag composite deposits via cold spray: investigation of bonding mechanism and deposition behavior', *Journal of Advanced Joining Processes*, 6 (2022), 100127 [P. Yu, Y. Xie, S. Yin, R. Lupoi]
- 'Interparticle bonding and interfacial nanocrystallization mechanisms in additively manufactured bulk metallic glass fabricated by cold spray', *Additive Manufacturing*, 58 (2022), 103057 [N. Fan, R. Lupoi, S. Yin]
- 'Crack-free laser powder bed fusion by substrate design', *Additive Manufacturing*, 59, Part A (2022), 103149 [X. Lu, W. Zhang, M. Chiumenti (...), R. Padamati Babu, R. Lupoi]
- McGinn, Conor**, 'Rapid disinfection of radiology treatment rooms using an autonomous ultraviolet germicidal irradiation robot', *American Journal of Infection Control* (2022), <http://dx.doi.org/10.1016/j.ajic.2021.11.022> [C. McGinn, R. Scott, C. Ryan, N. Donnelly, M.F. Cullinan, M. Beckett]
- 'Hospital surface disinfection using ultraviolet germicidal irradiation technology: a review', *Healthcare Technology Letters*, 9, 3 (2022), 25-33 [Scott, R. and Joshi, L.T. and McGinn, C.]
- 'Numerical model of the irradiance field surrounding a UV disinfection robot', *Biomedical Physics and Engineering Express*, 8, 5 (2022), <http://dx.doi.org/10.1088/2057-1976/ac7e6e> [De Matteis, L. and Cullinan, M.F. and McGinn, C.]
- Meskill, Craig**, 'Effect of the axial gap on the energy consumption of a single-blade wastewater pump', *Proc IMechE Part A: J Power and Energy*, 235, 3 (2021), 432-439 [F. Caruso, C. Meskill]
- 'Impact of combined heat and power on the goal of decarbonizing energy use in Irish manufacturing', *Journal of Cleaner Production*, 278 (2021), 123325 [A. Sgobba, C. Meskill]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Performance of a closed cycle power take off for mutriku breakwater', *The 12th international conference on flow-induced vibration*, ed L. Zimmer, Paris-Saclay (2022), 219-226 [M. Bellec, C. Gurhy, L. Gibson, C. Meskell]
- Monaghan, Michael**, 'Inside the joint of inflammatory arthritis patients: handling and processing of synovial tissue biopsies for high throughput analysis', *Frontiers in Medicine*, 9 (2022), 830998 [A. Floudas, A. Gorman, N. Neto, M.G. Monaghan, Z. Elliott, U. Fearon, V. Marzaioli]
- 'Non-invasive classification of macrophage polarisation by 2P-FLIM and machine learning', *eLife*, 11 (2022), e77373 [N. Neto, S. O'Rourke, M. Zhang, H. Fitzgerald, A. Dunne, M. Monaghan]
- 'Beyond chemistry: tailoring stiffness and microarchitecture to engineer highly sensitive biphasic elastomeric piezoresistive sensors', *ACS Applied Materials and Interfaces*, 14, 17 (2022), 19265-19277 [M. Solazzo, L. Hartzell, C. O'Farrell, M.G. Monaghan]
- 'A preclinical model of cutaneous melanoma based on reconstructed human epidermis', *Scientific Reports*, 12, 1 (2022), <http://dx.doi.org/10.1038/s41598-022-19307-0> [A. Leikeim, M. Wußmann, F.F. Schmidt (...), M.G. Monaghan *et al.*]
- 'Hydrophilic, conductive and flexible piezoresistive PEDOT:PSS 3D sensors with tunable microarchitecture and crosslinked using a PEGylated crosslinker', *Synthetic Metals*, 290 (2022), 117157 [M. Solazzo, M.G. Monaghan]
- 'Macrophage metabolic profile is altered by hydroxyapatite particle size', *Acta Biomaterialia* (2023), <http://dx.doi.org/10.1016/j.actbio.2023.01.058> [L.C. Shanley, O.R. Mahon, S.A. O'Rourke, N.G.B. Neto, M.G. Monaghan, D.J. Kelly, A. Dunne]
- Murray, Darina**, 'Natural convection from a triangular array of isothermal horizontal cylinders', *Experimental Thermal and Fluid Science* (2021), 110413 [M.J. Gibbons, S.G. Yates, S.M. O'Shaughnessy, T. Persoons, D.B. Murray]
- 'Heat transfer analysis of laminar pulsating flow in a rectangular channel using infrared thermography', *Journal of Heat Transfer*, 144, 1 (2022), <http://dx.doi.org/10.1115/1.4052686> [R. Blythman, S. Alimohammadi, N. Jeffers, D.B. Murray, T. Persoons]
- O'Reilly, Peter**, 'Wanted dead or alive: skeletal structure alteration of cold-water coral *Desmophyllum pertusum* (*Lophelia pertusa*) from anthropogenic stressors', *Oceans*, 4, 1 (2023), 68-79 [E.T. Krueger, J.V. Büscher, D.A. Hoey, D. Taylor, P.J. O'Reilly, Q.G. Crowley]
- O'Shaughnessy, Seamus**, 'Numerical investigation of conjugate heat transfer to a turbulent dual offset jet', *International Journal of Thermal Sciences*, 180 (2022), 107716 [T. Mondal, S.M. O'Shaughnessy]
- 'Experimental investigation of heat transfer enhancement by pulsating flow in a minichannel', *Journal of Physics: Conference Series*, 2116, 1 (2021), 012031 [P. Kumavat, S.M. O'Shaughnessy]
- 'Performance evaluation of thermoelectric generators under cyclic heating', *Journal of Physics: Conference Series*, 2116, 1 (2021), 012087 [N P Williams, L. Roumen, G. McCauley, S.M. O'Shaughnessy]
- 'The use of hot film sensors for the heat flux measurement of impinging jet flows: a comparison of postprocessing methods', *Heat and Mass Transfer* (2022), <http://dx.doi.org/10.1007/s00231-022-03297-w> [P. Murphy, T. Persoons, S. O'Shaughnessy]
- 'A computational conjugate heat transfer study of a rectangular minichannel undergoing sinusoidal flow pulsations', *International Journal of Thermal Sciences*, 182 (2022), 107790 [P.S. Kumavat, S. Alimohammadi, S.M. O'Shaughnessy]
- 'Flexible solar and thermal energy conversion devices: Organic photovoltaics (OPVs), organic thermoelectric generators (OTEGs) and hybrid PV-TEG systems', *Applied Materials Today*, 29 (2022), 101614 [A. Sharma, S. Masoumi, D. Gedefaw, S. O'Shaughnessy, D. Baran, A. Pakdel]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'An experimental evaluation of thermoelectric generator performance under cyclic heating regimes', *Heat and Mass Transfer* (2022), <http://hdl.handle.net/2262/101489> [N.P. Williams, J. Power, D. Trimble, S.M. O'Shaughnessy]
- 'Evaluation of bimodal microstructures in selective-laser-melted and heat-treated Ti-6Al-4V', *Materials and Design*, 227, 111700 (2023), <http://dx.doi.org/10.1016/j.matdes.2023.111700> [T. McKenna, C. Tomonto, G. Duggan, E. Lalor, S. O'Shaughnessy, D. Trimble]
- 'Comparison of the mean flow and turbulence characteristics of a single offset jet and a dual offset jet', *European Journal of Mechanics, B/Fluids*, 98 (2023), 161-179 [T. Mondal, N. Srivastava, S.M. O'Shaughnessy, S. Pramanik]
- Pakdel, Amir**, 'A comprehensive review on planar boron nitride nanomaterials: from 2D nanosheets towards 0D quantum dots', *Progress in Materials Science*, 124, 100884 (2022), <http://dx.doi.org/10.1016/j.pmatsci.2021.100884> [S. Angizi, S.A.A. Alem, A.M. Hasanzadeh (...), A. Pakdel, A. Simchi]
- 'Nanoengineering approaches to tune thermal and electrical conductivity of a BiSbTe thermoelectric alloy', *Advanced Engineering Materials*, 24, 1 (2022), <http://hdl.handle.net/2262/98607> [S. Masoumi, A. Pakdel]
- 'Prospects of MXenes in energy storage applications', *Chemosphere*, 297, 134225 (2022), <http://dx.doi.org/10.1016/j.chemosphere.2022.134225> [P.E. Lokhande, A. Pakdel, H.M. Pathan (...), P.P. Singh, B-K. Lee]
- 'Flexible solar and thermal energy conversion devices: organic photovoltaics (OPVs), organic thermoelectric generators (OTEGs) and hybrid PV-TEG systems', *Applied Materials Today*, 29 (2022), 101614 [A. Sharma, S. Masoumi, D. Gedefaw, S. O'Shaughnessy, D. Baran, A. Pakdel]
- 'Effect of bi nanoprecipitates on the thermoelectric properties of Bi-Sb-Te/Sb<sub>2</sub>O<sub>3</sub> nanocomposites', *Advanced Materials Interfaces*, 9, 24 (2022), <http://dx.doi.org/10.1002/admi.202200785> [A. Pakdel, A.U. Khan, F. Pawula, S. Hebert, T. Mori]
- Persoons, Tim**, 'Natural convection from a triangular array of isothermal horizontal cylinders', *Experimental Thermal and Fluid Science* (2021), 110413 [M.J. Gibbons, S.G. Yates, S.M. O'Shaughnessy, T. Persoons, D.B. Murray]
- 'A review of heat pipe technology for foldable electronic devices', *Applied Thermal Engineering*, 194, 117087 (2021), 1-26 [M.J. Gibbons, M. Marengo, T. Persoons]
- 'Exploring bulk volume, particle size and particle motion definitions to increase the predictive ability of *in vitro* dissolution simulations', *European Journal of Pharmaceutical Sciences* (2022), 106185 [M. Navas-Bachiller, T. Persoons, D.M. D'Arcy]
- 'Heat transfer analysis of laminar pulsating flow in a rectangular channel using infrared thermography', *Journal of Heat Transfer*, 144, 1 (2022), <http://dx.doi.org/10.1115/1.4052686> [R. Blythman, S. Alimohammadi, N. Jeffers, D.B. Murray, T. Persoons]
- 'Passive flow control for drag reduction on a cylinder in cross-flow using leeward partial porous coatings', *Fluids*, 6, 8 (2021), <http://dx.doi.org/10.3390/FLUIDS6080289> [I. Guinness, T. Persoons]
- 'Simplified steady-state representation of slot synthetic jet actuators to enable numerical optimization with steady RANS simulations', *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 11, 11 (2021), 1750-1758 [S. Battaglioli, O. James, M.J. Gibbons, T. Persoons]
- 'The use of hot film sensors for the heat flux measurement of impinging jet flows: a comparison of postprocessing methods', *Heat and Mass Transfer*, (2022), <http://dx.doi.org/10.1007/s00231-022-03297-w> [P. Murphy, T. Persoons, S. O'Shaughnessy]
- 'Measuring flow velocity and turbulence fields in thermal sciences using particle image velocimetry', *Advances in Heat Transfer*, (2022), <http://dx.doi.org/10.1016/bs.ahit.2022.07.001> [T. Persoons]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Combined passive/active flow control of drag and lift forces on a cylinder in crossflow using a synthetic jet actuator and porous coatings', *Actuators*, 11, 7 (2022), <http://dx.doi.org/10.3390/act11070201> [G. Farrell, M. Gibbons, T. Persoons]
- 'Measuring flow velocity and turbulence fields in thermal sciences using particle image velocimetry: a best practice guide', *Advances in Heat Transfer*, 54 (2022), 37-87 [T. Persoons]
- Reilly, Richard**, 'The development of visuotactile congruency effects for sequences of events', *Journal of Experimental Child Psychology*, 207 (2021), 105094 [A. O'Dowd, S.M. Cooney, F. Sorgini, E. O' Rourke, R.B. Reilly, F.N. Newell, R.J. Hirst]
- 'Transcutaneous spinal cord stimulation and motor responses in individuals with spinal cord injury: a methodological review', *PLoS ONE* (2021), <http://hdl.handle.net/2262/98150> [C. Taylor, C. McHugh, D. Mockler, C. Minogue, R.B. Reilly, N. Fleming]
- 'Gait characteristics and cognitive function in middle-aged adults with and without type 2 diabetes mellitus: data from ENBIND', *Sensors* (2022), <https://doi.org/10.3390/s22155710> [P.M.R. Herings, A.H. Dyer, S.P. Kennelly (...), J. Gibney, R.B. Reilly]
- 'Word finding, prosody and social cognition in multiple sclerosis', *Journal of Neuropsychology* (2022), <http://dx.doi.org/10.1111/jnp.12285> [S. Mei Yap, L. Davenport, C. Cogley (...), R. Reilly *et al.*]
- 'New approach in programming sequentially implanted children: towards balanced dynamic ranges (DR)', *Cochlear implants international*, 23, 4 (2022), 203-213 [P.C. Koscgallana, D. Viani Walsh, C. Simões-Franklin, J Thapa, P. Walshe, F. Glynn, R.B. Reilly, L. Viani]
- 'Brain-computer interfaces for treatment of focal dystonia', *Movement Disorders: Official Journal of the Movement Disorder Society*, 37, 9 (2022), 1798-1802 [K. Simonyan, S.K. Ehrlich, R. Andersen (...), R.B. Reilly *et al.*]
- 'Age and sex related differences in orthostatic cerebral oxygenation: findings from 2764 older adults in The Irish Longitudinal Study on Ageing (TILDA)', *Experimental Gerontology*, 167 (2022), 111903 [L. Newman, J.D. O'Connor, H. Nolan, R.B. Reilly, R.A. Kenny]
- 'Structural correlates of overt sentence reading in mild cognitive impairment and mild-to-moderate Alzheimer's disease', *Current Alzheimer Research* (2022) [C. De Looze, A. Dehsarvi, N. Suleyman, L. Crosby, B. Hernandez, R.F. Coen, B.A. Lawlor, R.B. Reilly]
- 'Cognitive and structural correlates of conversational speech timing in mild cognitive impairment and mild-to-moderate Alzheimer's disease: relevance for early detection approaches', *Frontiers in Aging Neuroscience*, 13 (2021), 637404 [C. De Looze, A. Dehsarvi, L. Crosby, A. Vourdanou, R.F. Coen, B.A. Lawlor, R.B. Reilly]
- 'Dystonia management: what to expect from the future? The perspectives of patients and clinicians within DystoniaNet Europe', *Frontiers in Neurology*, 12 (2021), 646841 [M. Smit, A. Albanese, M. Benson (...), R.B. Reilly *et al.*]
- Robinson, Anthony**, 'Evaporating hydrophilic and superhydrophobic droplets in electric fields', *International Journal of Heat and Mass Transfer*, 164 (2021), 120539 [M.J. Gibbons, A.I. Garivalis, S. O'Shaughnessy, P. Di Marco, A.J. Robinson]
- Simms, Ciaran**, 'Simulation in upper and lower limb trauma skill acquisition: a review', *Journal of the Society for Simulation in Healthcare*, 17, 1 (2022), 54-65 [L. Heskin, R. Galvin, O. Traynor, C. Simms]
- 'Designing a synthetic simulator to teach open surgical skills for limb exploration in trauma: a qualitative study exploring the experiences and perspectives of educators and surgical trainees', *BMC Surgery*, 21, 1 (2021), <http://dx.doi.org/10.1186/s12893-021-01417-7> [L. Heskin, C. Simms, O. Traynor, R. Galvin]
- 'Configurations of underreported cyclist-motorised vehicle and single cyclist collisions: analysis of a self-reported survey', *Accident Analysis and Prevention*, 159, 106264 (2021), <http://dx.doi.org/10.1016/j.aap.2021.106264> [K. Gildea, D. Hall, C. Simms]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'Editorial: Muscle mechanics, extracellular matrix, afferentation, structural, and neurological coupling and coordination in health and disease', *Frontiers in Physiology*, 12, 802202 (2021), <http://dx.doi.org/10.3389/fphys.2021.802202> [C.A. Yucesoy, E. Ponten, F.J. Valero-Cuevas, M. Smeulders, C.K. Simms]

'It's not all about power: a systematic review and meta-analysis comparing sex-based differences in kicking biomechanics in soccer', *Sports Biomechanics* (2021), <http://dx.doi.org/10.1080/14763141.2021.1981426> [M. Boyne, C. Simms, N. van Dyk (...), D. Mockler, F. Wilson]

'Physical and technical demands and preparatory strategies in female field collision sports: a scoping review', *International Journal of Sports Medicine* (2022), <http://dx.doi.org/10.1055/a-1839-6040> [K. Dane, C. Simms, S. Hendricks (...), D. Mockler, F. Wilson]

'Skeletal muscle surrogates for the acquisition of muscle repair skills in upper limb surgery', *Journal of the Mechanical Behavior of Biomedical Materials*, 131, 105216 (2022), <http://dx.doi.org/10.1016/j.jmbbm.2022.105216> [L. Heskin, R. Galvin, J. Conroy, O. Traynor, S. Madden, C. Simms]

'Assessment of deep learning pose estimates for sports collision tracking', *Journal of Sports Sciences* (2022), <http://dx.doi.org/10.1080/02640414.2022.2117474> [R. Blythman, M. Saxena, G.J. Tierney, C. Richter, A. Smolic, C. Simms]

'A novel simplified FE rail vehicle model in longitudinal and lateral collisions', *Machines*, 10, 12 (2022), <http://dx.doi.org/10.3390/machines10121214> [G. Deng, Y. Peng, L. Hou, Z. Li, B. Li, C. Yu, C. Simms]

**Spence, Stephen**, 'Investigation of the map width improvement in a radially reduced diffuser design concept for a centrifugal compressor', *ASME turbo expo 2022*, Rotterdam, the Netherlands (2022) [L. McLaughlin, S. Spence, D. Rusch, C. Stuart, M. Geron, K.S. Kwok, M. Fischer]

'Investigation of a novel turbine housing to produce a non-uniform spanwise flow field at the inlet to a mixed flow turbine and provide variable geometry capabilities', *ASME Journal of Turbomachinery* (2023) [R. Morrison, S. Spence, C. Stuart, T. Leonard, A. Starke, S. Kim]

'Using machine learning for loss prediction in a hybrid meanline modeling method to deliver improved radial turbine performance prediction', *ASME turbo expo 2022*, Rotterdam, The Netherlands (2022) [P. Ren, C. Stuart, S. Spence, R. Inomata, T. Kobayashi, I. Morita]

'On the effect of side clearance in the vaned diffuser of a centrifugal compressor', *ASME turbo expo 2022*, Rotterdam, The Netherlands (2022) [L. Gibson, S. Spence, C. Stuart, A. Starke, S. Kim]

'On the effect of side clearance in the vaned diffuser of a centrifugal compressor', *ASME Journal of Turbomachinery* (2023) [L. Gibson, S. Spence, C. Stuart, A. Starke, S. Kim]

'Using machine learning for loss prediction in a hybrid meanline modeling method to deliver improved radial turbine performance prediction', *ASME Journal of Turbomachinery* (2023) [P. Ren, C. Stuart, S. Spence, R. Inomata, T. Kobayashi, I. Morita]

**Stuart, Charles**, 'Investigation of the map width improvement in a radially reduced diffuser design concept for a centrifugal compressor', *ASME turbo expo 2022*, Rotterdam, The Netherlands (2022) [L. McLaughlin, S. Spence, D. Rusch, C. Stuart, M. Geron, K.S. Kwok, M. Fischer]

'Investigation of a novel turbine housing to produce a non-uniform spanwise flow field at the inlet to a mixed flow turbine and provide variable geometry capabilities', *ASME Journal of Turbomachinery* (2023) [R. Morrison, S. Spence, C. Stuart, T. Leonard, A. Starke, S. Kim]

'Using machine learning for loss prediction in a hybrid meanline modeling method to deliver improved radial turbine performance prediction', *ASME turbo expo 2022*, Rotterdam, The Netherlands (2022) [P. Ren, C. Stuart, S. Spence, R. Inomata, T. Kobayashi, I. Morita]

'On the effect of side clearance in the vaned diffuser of a centrifugal compressor', *ASME turbo expo 2022*, Rotterdam, The Netherlands (2022) [L. Gibson, S. Spence, C. Stuart, A. Starke, S. Kim]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'On the effect of side clearance in the vaned diffuser of a centrifugal compressor', *ASME Journal of Turbomachinery* (2023) [L. Gibson, S. Spence, C. Stuart, A. Starke, S. Kim]
- 'Using machine learning for loss prediction in a hybrid meanline modeling method to deliver improved radial turbine performance prediction', *ASME Journal of Turbomachinery* (2023) [P. Ren, C. Stuart, S. Spence, R. Inomata, T. Kobayashi, I. Morita]
- Taylor, David**, 'Application of the theory of critical distances to predict the effect of induced and process inherent defects for SLM Ti-6Al-4V in high cycle fatigue', *CIRP Annals-Manufacturing Technology*, 70, 1 (2021), 171-174 [B. Gillham, A. Yankin, F. McNamara, C. Tomonto, D. Taylor, R. Lupoi]
- 'The analysis of small-scale notches on the fatigue performance of SLM Ti-6Al-4V; a theory of critical distances approach', *Key Engineering Materials*, 926 (2022), 250-267 [B. Gillham, A. Yankin, H. Shipley (...), D. Taylor, R. Lupoi]
- 'Erosion of soft tissue by polypropylene mesh products', *Journal of the Mechanical Behavior of Biomedical Materials*, 115 (2021), 104281 [A. Schmidt, D. Taylor]
- 'The development of equipment to measure mesh erosion of soft tissue', *Materials*, 14(2021), 1-13 [A. Schmidt, G. O'Brien, D. Taylor]
- 'Failure mechanisms and bending strength of *Fuchsia magellanica* v *gracilis* stems', *Journal of the Royal Society Interface*, 18 (2021), 20201023 [T. Hone, M. Mylo, O. Speck, T. Speck, D. Taylor]
- 'Fracture and repair in a bioinspired self-healing structure', *Fatigue and Fracture of Engineering Materials and Structures*, 44 (2021), 3373-3383 [T. Hone, S. Kelehan, D. Taylor]
- 'Using the theory of critical distances to predict notch effects in fibre composites', *Theoretical and Applied Fracture Mechanics*, 118 (2022), 103285 [D. Morgan, S. Quinlan, D. Taylor]
- 'Analysis of biaxial fatigue limit models for cases with circular notches', *International Journal of Fatigue*, 162 (2022), 106981 [V. Chaves, A. Navarro, L. Susmel, D. Taylor]
- 'Energy TCD-robust and simple failure prediction unifying the TCD and ASED criterion', *Engineering Fracture Mechanics*, 271 (2022), 108652 [P. Seibert, D. Taylor, F. Berto, S. Razavi]
- 'Predicting the degradation of slip resistance in paving materials', *WEAR*, 512 (2023), 204520 [J. Benson, C. Wickham, T. Rowan, D. Taylor]
- 'Wanted dead or alive: skeletal structure alteration of cold-water coral *Desmophyllum pertusum* (*Lophelia pertusa*) from anthropogenic stressors', *Oceans*, 4, 1 (2023), 68-79 [E.T. Krueger, J.V. Büscher, D.A. Hoey, D. Taylor, P.J. O'Reilly, Q.G. Crowley]
- Trimble, Daniel**, 'An experimental evaluation of thermoelectric generator performance under cyclic heating regimes', *Heat and Mass Transfer* (2022), <http://hdl.handle.net/2262/101489> [N.P. Williams, J. Power, D. Trimble, S.M. O'Shaughnessy]
- Wasala, Sahan**, 'Fan noise reduction using acoustic metamaterials towards efficient data centers', *OCP future technologies symposium - open compute project global summit*, San Jose CA, USA (2022), <http://hdl.handle.net/2262/101836> [S. Wasala, W. Zhao, O. Ogun, L. Stevens, R. Sosseh, J. Kennedy, T. Persoons]
- Yin, Shuo**, 'Improvement of tensile strength of cold sprayed Fe deposits via in-process powder preheating', *Materials Letters*, 316 (2022), 132090 [Y. Xie, N. Fan, J. Yang, W. Li, R. Lupoi, X. Guo, R. Huang, S. Yin]
- 'Microstructural and mechanical optimization of selective laser melted Ti<sub>6</sub>Al<sub>4</sub>V lattices: effect of hot isostatic pressing', *Journal of Manufacturing Processes*, 77 (2022), 151-162 [X. Yan, S. Yue, J. Ge, C. Chen, R. Lupoi, S. Yin]
- 'Strengthening behavior of AlCoCrFeNi(TiN)<sub>x</sub> high-entropy alloy coatings fabricated by plasma spraying and laser remelting', *Journal of Materials Science and Technology*, 121 (2022), 163-173 [B. Jin, N. Zhang, S. Yin]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'Mechanical and fatigue properties of diamond-reinforced Cu and Al metal matrix composites prepared by cold spray', *Journal of Thermal Spray Technology*, 31 (2022), 217-233 [O. Kovarik, J. Cizek, S. Yin, R. Lupoi, M. Janovska, J. Cech, J. Capek, J. Siegl, T. Chraska]

'Powder reuse in laser-based powder bed fusion of Ti<sub>6</sub>Al<sub>4</sub>V-changes in mechanical properties during a powder top-up regime', *Materials*, 15 (2022), 2238 [R. Harkin, H. Wu, S. Nikam (...), S. Yin *et al.*]

'Microstructure and tribological properties of plasma cladding FeCoNiCr-x(TiC) composite coatings', *Journal of Thermal Spray Technology* (2022), <https://doi.org/10.1007/s11666-022-01383-3> [N. Liu, N. Zhang, M. Shi, B. Xing, X. Zuo, S. Yin]

'Microstructure refinement and strengthening in laser additive manufactured Ti<sub>6</sub>Al<sub>4</sub>V alloy under nitrogen-argon reactive atmosphere', *Materials Science and Engineering A*, 841(2022), 143076 [C. Chen, L. Liu, R. Zhao (...), S. Yin *et al.*]

'Towards understanding metallurgical defect formation of selective laser melted wrought aluminum alloys', *Advanced Powder Materials*, 1, 4 (2022), 100035 [J. Zhang, W. Yuan, B. Song, S. Yin, X. Wang, Q. Wei, Y. Shi]

'Compressive strength of β-TCP scaffolds fabricated via lithography-based manufacturing for bone tissue engineering', *Ceramics International*, 48, 11 (2022), 15516-15524 [E. Ryan, S. Yin]

'Self-equilibrated backstresses induce compensation between hardening and softening: micromechanical and microstructural features', *Materials Science and Engineering A*, 843 (2022), 143145 [Q. Xie, J.J. Sidor, J. Lian, S. Yin, Y. Wang]

'Effect of a constant laser energy density on the evolution of microstructure and mechanical properties of NiTi shape memory alloy fabricated by laser powder bed fusion', *Optics and Laser Technology*, 152 (2022), 108182 [Q. Ren, C. Chen, Z. Lu (...), S. Yin *et al.*]

'Influence of processing parameters on density, surface morphologies and hardness of as-built Ti-5Al-5Mo-5V-3Cr alloy manufactured by selective laser melting', *Journal of Alloys and Compounds*, 910 (2022), 164760 [M. Ahmed, M.A. Obeidi, S. Yin, R. Lupoi]

'On the application of the anisotropic enhanced thermal conductivity approach to thermal modelling of laser-based powder bed fusion processes', *Additive Manufacturing*, 55 (2022), 102870 [S. Nikam, H. Wu, R. Harkin, J. Quinn, R. Lupoi, S. Yin, S. McFadden]

'Strength-ductility synergy of CoCrNi medium-entropy alloy processed with laser powder bed fusion', *Materials and Design*, 219 (2022), 110774 [J. Ge, C. Chen, R. Zhao, Q. Liu, Y. Long, J. Wang, Z. Ren, S. Yin]

'Interparticle bonding and interfacial nanocrystallization mechanisms in additively manufactured bulk metallic glass fabricated by cold spray', *Additive Manufacturing*, 58 (2022), 103057 [N. Fan, C. Huang, Z. Wang, P. Yu, W. Chen, R. Lupoi, Q. Xie, L. Liu, S. Yin]

'Crack-free laser powder bed fusion by substrate design', *Additive Manufacturing*, 59 (2022), 103149 [X. Lu, W. Zhang, M. Chiumenti (...), S. Yin *et al.*]

'Ductile and high strength Cu fabricated by solid-state cold spray additive manufacturing', *Journal of Materials Science and Technology*, 134 (2022), 234-243 [C. Chen, Y. Xie, S. Yin (...), M. Liu, Z. Re]

'Fabrication of Ta-Ag composite deposits via cold spray: investigation of bonding mechanism and deposition behavior', *Journal of Advanced Joining Processes*, 6 (2022), 100127 [P. Yu, Y. Xie, S. Yin, R. Lupoi]

'Evolution of microstructure and mechanical property of Ti-47Al-2Cr-2Nb intermetallic alloy by laser direct energy deposition: from a single-track, thin-wall to bulk', *Materials Characterization*, 190 (2022), 112053 [T. Cao, C. Chen, W. Wang (...), S. Yin *et al.*]

'Corrosion resistance and passivation behavior of CoCrFeNi-TiAl high-entropy alloy coatings in acidic solutions', *Journal of Thermal Spray Technology*, 31 (2022), 1673-1682 [B. Xing, Q. Ding, B. Jin, X. Zuo, N. Zhang, S. Yin]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'Metal additive manufacturing via a novel composite material using powder and polymers formed in sheets', *CIRP Annals-Manufacturing Technology*, 71, 1 (2022), 181-184 [R. Lupoi, W.M. Abbott, R. Senthamarai Kannan, S. McConnell, J. Connolly, S. Yin, R. Padamati Babu]

'Influence of microstructure evolution on the electrochemical corrosion behavior of (CoCrFeNi)<sub>94</sub>Ti<sub>1.5</sub>Al<sub>4.5</sub> high entropy alloy coatings', *Journal of Thermal Spray Technology*, 31 (2022), 1375-1385 [B. Xing, X. Zuo, Q. Li, B. Jin, N. Zhang, S. Yin]

'An assessment of the high temperature oxidation resistance of selected thermal sprayed high entropy alloy coatings', *Journal of Thermal Spray Technology*, 31 (2022), 1386-1403 [X. Zhang, N. Zhang, B. Xing, S. Yin]

'Microstructural, mechanical and wear behaviour of HVOF and cold sprayed High Entropy Alloys (HEAs) coatings', *Journal of Thermal Spray Technology*, 31 (2022), 1184-1206 [A. Silvello, P. Cavaliere, S. Yin, R. Lupoi, I. Garcia Cano, S. Dosta]

'Cold spray: over 30 years of development towards a hot future', *Journal of Thermal Spray Technology*, 31(2022), 866-907 [D. Guo, M. Kazasidis, A. Hawkins (...), S. Yin et al.]

'Tailoring phase transformation behavior, microstructure, and superelasticity of NiTi shape memory alloys by specific change of laser power in selective laser melting', *Materials Science and Engineering A*, 864 (2023), 144576 [H.Z. Lu, H.W. Ma, Y. Yang, W.S. Cai, X. Luo, A. Yan, L.M. Kang, S. Yin, C. Yang]

'Enhancement on mechanical properties of CoCrNi medium entropy alloy via cold spray additive manufacturing associated with sintering', *Journal of Manufacturing Processes*, 96 (2023), 413-423 [Y. Zhang, B. Qin, K.C. Chan (...), S. Yin et al.]

### Research student

Williams, Niall, 'Performance evaluation of thermoelectric generators under cyclic heating', *Journal of Physics: Conference Series*, 2116, 1 (2021), 012087 [N P Williams, L. Roumen, G. G. McCauley, S.M. O'Shaughnessy]

'An experimental evaluation of thermoelectric generator performance under cyclic heating regimes', *Heat and Mass Transfer* (2022), <http://hdl.handle.net/2262/101489> [N.P. Williams, J. Power, D. Trimble, S.M. O'Shaughnessy]

## School of Genetics and Microbiology

### GENETICS

Bracken, Adrian, 'Myeloid cell nuclear differentiation antigen controls the pathogen-stimulated type I interferon cascade in human monocytes by transcriptional regulation of IRF7', *Nature Communications*, 13, 1 (2022), 14 [L. Gu, D. Casserly, G. Brady, S. Carpenter, A.P. Bracken, K.A. Fitzgerald, L. Unterholzner, A.G. Bowie]

'Prognostic value of the 6-gene OncoMasTR test in hormone receptor-positive HER2-negative early-stage breast cancer: comparative analysis with standard clinicopathological factors', *European Journal of Cancer*, 152 (2021), 78-89 [S.M. Lynch, N.M. Russell, S. Barron, C.M. Kelly, D.P. O'Connor, W.M. Gallagher]

'The corepressors GPS2 and SMRT control enhancer and silencer remodeling via eRNA transcription during inflammatory activation of macrophages', *Molecular Cell*, 81, 5 (2021), 953-968.e9 [Z. Huang, N. Liang, M.U. Kaikkonen, R. Fan, E. Treuter]

'Analytical validation of a novel 6-gene signature for prediction of distant recurrence in estrogen receptor-positive, HER2-negative, early-stage breast cancer', *Clinical Chemistry*, 68, 6 (2022), 837-847 [T. Loughman, S. Barron, C.A. Wang, J. Crown, A.P. Bracken, W.M. Gallagher]

'Macrophage innate training induced by IL-4 and IL-13 activation enhances OXPHOS driven anti-mycobacterial responses', *eLife*, 11, e74690 (2022), <http://dx.doi.org/10.7554/eLife.74690> [M.L.E. Lundahl, M. Mittermeyer, S.V. Gordon, E.C. Lavelle]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

**Campbell, Matthew**, 'Vascular and blood-brain barrier-related changes underlie stress responses and resilience in female mice and depression in human tissue', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-021-27604-x> [L. Dion-Albert, A. Cadoret, E. Doney, M. Campbell, G. Turecki, N. Mechawar, C. Menard]

'SARM1 promotes photoreceptor degeneration in an oxidative stress model of retinal degeneration', *Frontiers in Neuroscience*, 16, 852114 (2022), <http://hdl.handle.net/2262/98561> [L. Gibbons, E. Ozaki, C. Greene (...), M. Campbell, S.L. Doyle]

'Minocycline suppresses disease-associated microglia (DAM) in a model of photoreceptor cell degeneration', *Experimental Eye Research*, 217, 108953 (2022), <http://hdl.handle.net/2262/98562> [E. Ozaki, C. Delaney, M. Campbell, S.L. Doyle]

'Microvascular stabilization via blood-brain barrier regulation prevents seizure activity', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-022-29657-y> [C. Greene, N. Hanley, C.R. Reschke, M. Campbell]

'Methamphetamine enhances caveolar transport of therapeutic agents across the rodent blood-brain barrier', *Cell Reports Medicine*, 3, 1 (2022), <http://dx.doi.org/10.1016/j.xcrm.2021.100497> [J-H. Chang, C. Greene, K. Frudd (...), M. Campbell, P. Turowski]

'Immunohistochemical analysis of tight junction proteins', *Methods in Molecular Biology*, 2492 (2022), 307-314 [C. Greene, M. Campbell]

'Permeability of the blood-brain barrier after traumatic brain injury: radiological considerations', *Journal of Neurotrauma*, 39, 1-2 (2022), 20-34 [M. Amoo, P.J. O'Halloran, J. Henry (...), M. Campbell *et al.*]

'Microglia-neutrophil interactions drive dry AMD-like pathology in a mouse model', *Cells*, 11, 22 (2022), <http://dx.doi.org/10.3390/cells11223535> [M. Boyce, Y. Xin, O. Chowdhury (...), M. Campbell *et al.*]

'Recurrent *de novo* mutations in CLDN5 induce an anion-selective blood-brain barrier and alternating hemiplegia', *Brain: a Journal of Neurology*, 145, 10 (2022), 3374-3382 [Y. Hashimoto, K. Poirier, N. Boddaert (...), A. Munnich, M. Campbell]

**Farrar, Gwyneth**, 'AAV-PHP.eB transduces both the inner and outer retina with high efficacy in mice', *Molecular Therapy - Methods and Clinical Development*, 25 (2022), 236-249 [A. Palfi, N. Chadderton, S. Millington-Ward, I Post, P. Humphries, P.F. Kenna, G.J. Farrar]

'BBS1 branchpoint variant is associated with non-syndromic retinitis pigmentosa', *Journal of Medical Genetics*, 59, 5 (2022), 438-444 [Z. Fadaie, L. Whelan, A. Dockery (...), G.J. Farrar *et al.*]

'Using single molecule molecular inversion probes as a cost-effective, high-throughput sequencing approach to target all genes and loci associated with macular diseases', *Human Mutation*, 43, 12 (2022), 2234-2250 [R.J. Hitti-Malin, C-M. Dhaenens, D.M. Panneman (...), G.J. Farrar *et al.*]

'Optical genome mapping and revisiting short-read genome sequencing data reveal previously overlooked structural variants disrupting retinal disease-associated genes', *Genetics in Medicine*, 100345 (2022), <http://dx.doi.org/10.1016/j.gim.2022.11.013> [S.E. de Bruijn, K. Rodenburg, J. Corominas, T. Ben-Yosef, K. Neveling, S. Roosing]

'MFRP-associated retinopathy and nanophthalmos in two Irish probands: a case report', *Case Reports in Ophthalmology*, 13, 3 (2022), 1015-1023 [A. O'Connell, J. Zhu, K.A.J. Stephenson (...), G.J. Farrar, D. Keegan]

**Hokamp, Karsten**, 'Aneuploidy influences the gene expression profiles in *Saccharomyces pastorianus* group I and II strains during fermentation', *PLoS Genetics*, 18, 4 (2022), <http://hdl.handle.net/2262/98646> [R. de la Cerda-Garcia Caro, K. Hokamp, F. Roche, G. Thompson, S. Timouma, D. Delneri, U. Bond]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Enhanced flavour profiles through radicicol induced genomic variation in the lager yeasts, *Saccharomyces pastorianus*', *Yeast*, 39, 10 (2022), 535-547 [R. de la Cerda Garcia-Caro, G. Thompson, P. Zhang, K. Hokamp, F. Roche, S. Carlin, U. Vrhovsek, U. Bond]
- 'Von Willebrand factor links primary hemostasis to innate immunity', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-022-33796-7> [C. Drakeford, S. Aguila, F. Roche, K. Hokamp, F.J. Sheedy, P. Fallon, J.S. O'Donnell]
- 'BOSC 2022: the first hybrid and 23rd annual bioinformatics open source conference', *F1000Research*, 11 (2022), 1034 [N.L. Harris, K. Hokamp, H. Ménager, M. Munoz-Torres, D. Unni, N. Vasilevsky, J. Williams]
- Hudson, Natalie**, 'Brain barriers virtual: an interim solution or future opportunity?', *Fluids and Barriers of the CNS*, 19, 1 (2022), <http://hdl.handle.net/2262/98343> [B.M. Holder, S.E. Tolan, K.K. Heinrich, A.M.S. Hartz, B.J. Kim]
- 'Vascular and blood-brain barrier-related changes underlie stress responses and resilience in female mice and depression in human tissue', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-021-27604-x> [L. Dion-Albert, A. Cadoret, E. Doney, G. Turecki, N. Mechawar, C. Menard]
- Humphries, Marian**, 'siRNA targeting Schlemm's canal endothelial tight junctions enhances outflow facility and reduces IOP in a steroid-induced OHT rodent model', *Molecular Therapy - Methods and Clinical Development*, 20 (2021), 86-94 [P.S. Cassidy, R.A. Kelly, E. Reina-Torres (...), M.M. Humphries *et al.*]
- 'RPE-directed gene therapy improves mitochondrial function in murine dry AMD models', *International Journal of Molecular Sciences*, 24, 4 (2023), <http://dx.doi.org/10.3390/ijms24043847> [S. Millington-Ward, N. Chadderton, L.K. Finnegan (...), M.M. Humphries *et al.*]
- Humphries, Peter**, 'Fibrotic changes to Schlemm's canal endothelial cells in glaucoma', *International Journal of Molecular Sciences*, 22, 17 (2021), <http://hdl.handle.net/2262/98252> [R.A. Kelly, K.M. Perkumas, M. Campbell (...), P. Humphries *et al.*]
- 'Next-generation sequencing applications for inherited retinal diseases', *International Journal of Molecular Sciences*, 22, 11 (2021), <http://dx.doi.org/10.3390/ijms22115684> [A. Dockery, L. Whelan, P. Humphries, G.J. Farrar]
- 'siRNA targeting Schlemm's canal endothelial tight junctions enhances outflow facility and reduces IOP in a steroid-induced OHT rodent model', *Molecular Therapy-Methods and Clinical Development*, 20 (2021), 86-94 [P.S. Cassidy, R.A. Kelly, E. Reina-Torres, D.R. Overby, P. Humphries, J. O'Callaghan]
- 'AAV-PHP.eB transduces both the inner and outer retina with high efficacy in mice', *Molecular Therapy - Methods and Clinical Development*, 25 (2022), 236-249 [A. Palfi, N. Chadderton, S. Millington-Ward, I. Post, P. Humphries, P.F. Kenna, G.J. Farrar]
- 'Consensus recommendation for mouse models of ocular hypertension to study aqueous humor outflow and its mechanisms', *Investigative Ophthalmology and Visual Science*, 63, 2 (2022), <http://dx.doi.org/10.1167/iov.63.2.12> [C.M. McDowell, K. Kizhatil, C. Ross Ethier, W. Daniel Stamer]
- Mattiangeli, Valeria**, 'Ancient genomics reveals tripartite origins of Japanese populations', *Science Advances*, 7, 38 (2021), <http://dx.doi.org/10.1126/sciadv.abh2419> [N.P. Cooke, V. Mattiangeli, L.M. Cassidy (...), T. Gakuhari, S. Nakagome]
- McLaughlin, Russell**, 'Extra-motor cerebral changes and manifestations in primary lateral sclerosis', *Brain Imaging Behav.*(2021), <https://doi.org/10.1007/s11682-020-00421-4> [E. Finegan, S.L.H. Shing, R.H. Chipika (...), R.L. McLaughlin *et al.*]
- 'Infratentorial pathology in frontotemporal dementia: cerebellar grey and white matter alterations in FTD phenotypes', *J Neurol* (2021), <https://doi.org/10.1007/s00415-021-10575-w> [M.C. McKenna, R.H. Chipika, S. Li Hi Shing (...), R.L. McLaughlin *et al.*]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'Author correction: Common and rare variant association analyses in amyotrophic lateral sclerosis identify 15 risk loci with distinct genetic architectures and neuron-specific biology (Nature Genetics, (2021), 53, 12, (1636-1648), 10.1038/s41588-021-00973-1)', *Nature Genetics*(2022), <http://dx.doi.org/10.1038/s41588-022-01020-3> [W. van Rheenen, R.A.A. van der Spek, M.K. Bakker, J.J.F.A. van Vugt (...), R. McLaughlin *et al.*]

'Genome-wide study of DNA methylation shows alterations in metabolic, inflammatory, and cholesterol pathways in ALS', *Science Translational Medicine*, 14, 633 (2022), <http://dx.doi.org/10.1126/scitranslmed.abj0264> [P.J. Hop, R.A.J. Zwamborn, E. Hannon, G.L. Shireby, G. Bensimon, G.D. Smith]

'Structural variation analysis of 6,500 whole genome sequences in amyotrophic lateral sclerosis', *NPJ Genomic Medicine*, 7, 1 (2022), <http://dx.doi.org/10.1038/s41525-021-00267-9> [A. Al Khleifat, A. Iacoangeli, J.J.F.A. van Vugt, J.H. Veldink, A. Al-Chalabi]

'Common and rare variant association analyses in amyotrophic lateral sclerosis identify 15 risk loci with distinct genetic architectures and neuron-specific biology', *Nature Genetics*, 53, 12 (2021), 1636-1648 [W. van Rheenen, R.A.A. van der Spek, M.K. Bakker, J.H. Veldink]

'Association of variants in the SPTLC1 gene with juvenile amyotrophic lateral sclerosis', *JAMA Neurology*, 78, 10 (2021), 1236-1248 [J.O. Johnson, R. Chia, D.E. Miller (...), R. McLaughlin *et al.*]

'REScan: inferring repeat expansions and structural variation in paired-end short read sequencing data', *Bioinformatics*, 37, 6 (2021), 871-872 [R.L. McLaughlin]

'Pathogenic Huntingtin repeat expansions in patients with frontotemporal dementia and amyotrophic lateral sclerosis', *Neuron*, 109, 3 (2021), 448-460.e4 [R. Dewan, R. Chia, G. Mora (...), R. McLaughlin *et al.*]

'Telomere length analysis in amyotrophic lateral sclerosis using large-scale whole genome sequence data', *Frontiers in Cellular Neuroscience*, 16, 1050596 (2022), <http://dx.doi.org/10.3389/fncel.2022.1050596> [A. Al Khleifat, A. Iacoangeli, J.H. Veldink, A. Al-Chalabi]

'The SOD1-mediated ALS phenotype shows a decoupling between age of symptom onset and disease duration', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-022-34620-y> [S. Opie-Martin, A. Iacoangeli, S.D. Topp, R.H. Brown, A. Al-Chalabi, C.E. Shaw]

**McLysaght, Aoife**, 'Publisher correction: Reconstruction of proto-vertebrate, protocyclostome and proto-gnathostome genomes provides new insights into early vertebrate evolution (Nature Communications, (2021), 12, 1, (4489), 10.1038/s41467-021-24573-z)', *Nature Communications*, 12, 1 (2021), <http://dx.doi.org/10.1038/s41467-021-25110-8> [Y. Nakatani, P. Shingate, V. Ravi, N.E. Pillai, A. Prasad, A. McLysaght, B. Venkatesh]

'Author Correction: *De novo* emergence of adaptive membrane proteins from thymine-rich genomic sequences (Nature Communications, (2020), 11, 1, (781), 10.1038/s41467-020-14500-z)', *Nature Communications*, 12, 1 (2021), <http://dx.doi.org/10.1038/s41467-020-20609-y> [N. Vakirlis, O. Acar, B. Hsu, N.C. Coelho, T. Ideker, A-R. Carvunis]

'Reply to: Available data do not rule out ctenophora as the sister group to all other metazoa', *Nature Communications*, 14, 1 (2023), <http://dx.doi.org/10.1038/s41467-023-36152-5> [A.K. Redmond, A. McLysaght]

'*De novo* birth of functional microproteins in the human lineage', *Cell Reports*, 41, 12 (2022), <http://dx.doi.org/10.1016/j.celrep.2022.111808> [N. Vakirlis, Z. Vance, K.M. Duggan, A. McLysaght]

'Author correction: Evidence for sponges as sister to all other animals from partitioned phylogenomics with mixture models and recoding (Nature Communications, (2021), 12, 1, (1783), 10.1038/s41467-021-22074-7)', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-022-33707-w> [A.K. Redmond, A. McLysaght]

'The deceptive simplicity of Mendelian genetics', *PLoS Biology*, 20, 7 (2022), <http://dx.doi.org/10.1371/journal.pbio.3001691> [A. McLysaght]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

**Mitchell, Kevin**, 'Double stranded RNA drives anti-viral innate immune responses, sickness behavior and cognitive dysfunction dependent on dsRNA length, IFNAR1 expression and age', *Brain, Behavior, and Immunity*, 95 (2021), 413-428 [N. McGarry, C.L. Murray, K.J. Mitchell, .C. Cunningham]

'Naturalising agent causation', *Entropy*, 24, 4 (2022), <http://dx.doi.org/10.3390/e24040472> [H.D. Potter, K.J. Mitchell]

'Developmental noise is an overlooked contributor to innate variation in psychological traits', *Behavioral and Brain Sciences*, 45, e171 (2022), <http://dx.doi.org/10.1017/S0140525X21001655> [K.J. Mitchell]

**Redmond, Anthony**, 'Sharks provide evidence for a highly complex TNFSF repertoire in the jawed vertebrate ancestor', *Journal of Immunology (Baltimore, Md.: 1950)*, 209, 9 (2022), 1713-1723 [A.K. Redmond, R. Pettinello, F.K. Bakke, H. Dooley]

'Author correction: Evidence for sponges as sister to all other animals from partitioned phylogenomics with mixture models and recoding', *Nature Communications*, 13, 1 (2022), 6639 [A.K. Redmond, A. McLysaght]

'Reply to: Available data do not rule out ctenophora as the sister group to all other metazoa', *Nature Communications*, 14, 1 (2023), <http://dx.doi.org/10.1038/s41467-023-36152-5> [A.K. Redmond, A. McLysaght]

### MICROBIOLOGY

**Bond, Ursula**, 'Aneuploidy influences the gene expression profiles in *Saccharomyces pastorianus* group I and II strains during fermentation', *PLoS Genetics*, 18, 4 (2022), <http://hdl.handle.net/2262/98646> [R. de la Cerda-Garcia Caro, K. Hokamp, F. Roche, G. Thompson, S. Timouma, D. Delneri, U. Bond]

'Packing a punch: understanding how flavours are produced in lager fermentations', *FEMS Yeast Research*, 21, 5 (2021), <http://hdl.handle.net/2262/98645> [C.L. Lin, R.D.L.C. Garcia-Caro, P. Zhang, S. Carlin, A. Gottlieb, M.A. Petersen, U. Vrhovsek, U. Bond]

'Population genomics of the pathogenic yeast *Candida tropicalis* identifies hybrid isolates in environmental samples', *PLoS Pathogens*, 17, 3 (2021), <http://hdl.handle.net/2262/98644> [C.E. O'Brien, J. Oliveira-Pacheco, C.T. Hittinger, T.R. Rogers, O. Zaragoza, U. Bond, G. Butler]

'Transcriptional profile of the industrial hybrid *Saccharomyces pastorianus* reveals temperature-dependent allele expression bias and preferential orthologous protein assemblies', *Molecular Biology and Evolution*, 38, 12 (2021), 5437-5452 [S. Timouma, L.N. Balarezo-Cisneros, J. Pinto, R. De La Cerda, U. Bond, J-M. Schwartz, D. Delneri]

'Enhanced flavour profiles through radicol induced genomic variation in the lager yeasts, *Saccharomyces pastorianus*', *Yeast*, 39, 10 (2022), 535-547 [R. de la Cerda Garcia-Caro, G. Thompson, P. Zhang, K. Hokamp, F. Roche, S. Carlin, U. Vrhovsek, U. Bond]

**Corr, Sinead**, 'Intestinal metabolites influence macrophage phagocytosis and clearance of bacterial infection', *Frontiers in Cellular and Infection Microbiology*, 11 (2021), <http://dx.doi.org/10.3389/fcimb.2021.622491> [A.A. O'Callaghan, E. Dempsey, N. Iyer, S. Stiegeler, K. Mercurio, S.C. Corr]

'Gut microbial metabolite-mediated regulation of the intestinal barrier in the pathogenesis of inflammatory bowel disease', *Nutrients*, 13, 12 (2021), <http://dx.doi.org/10.3390/nu13124259> [N. Iyer, S.C. Corr]

'The impact of micrnas during inflammatory bowel disease: effects on the mucus layer and intercellular junctions for gut permeability', *Cells*, 10, 12 (2021), <http://dx.doi.org/10.3390/cells10123358> [S. Stiegeler, K. Mercurio, M.A. Iancu, S.C. Corr]

'*Lactobacillus* spp. for gastrointestinal health: current and future perspectives', *Frontiers in Immunology*, 13, 840245 (2022), <http://dx.doi.org/10.3389/fimmu.2022.840245> [E. Dempsey, S.C. Corr]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'The traditional Chinese medicine *Houttuynia cordata* Thunb decoction alters intestinal barrier function via an EGFR dependent MAPK (ERK1/2) signalling pathway', *Phytomedicine*, 105 (2022), 154353 [J. Wang, E. Dempsey, S.C. Corr, W. Kukula-Koch, A. Sasse, H. Sheridan]
- '*Lactobacillus salivarius* UCC118™ dampens inflammation and promotes microbiota recovery to provide therapeutic benefit in a DSS-induced colitis model', *Microorganisms*, 10, 7 (2022), <http://dx.doi.org/10.3390/microorganisms10071383> [N. Iyer, M.A. Williams, F. Crispie, P.D. Cotter, S.C. Corr]
- Dorman, Charles**, 'Reciprocally rewiring and repositioning the Integration Host Factor (IHF) subunit genes in *Salmonella enterica* serovar Typhimurium: impacts on physiology and virulence', *Microbial Genomics*, 8, 2 (2022), <http://dx.doi.org/10.1099/mgen.0.000768> [G. Pozdееv, M.C. Beckett, A. Mogre, N.R. Thomson, C.J. Dorman]
- 'Physiological robustness of model gram-negative bacteria in response to genome rewiring', *Microbial Physiology*, 32, 5-6 (2022), 158-176 [C.J. Dorman, M.J. Dorman]
- 'Mechanistic insights from molecular microbiology into the production of immunological and neuronal diversity', *Molecular Microbiology* (2022), <http://dx.doi.org/10.1111/MMI.14997> [C.J. Dorman]
- 'Variable DNA topology is an epigenetic generator of physiological heterogeneity in bacterial populations', *Molecular Microbiology* (2023) [C.J. Dorman]
- 'The DNA-relaxation-dependent off-to-on biasing of the type 1 fimbrial genetic switch requires the Fis nucleoid-associated protein', *Microbiology*, 169, 1 (2023), 001283 [C. Conway, M.C. Beckett, C.J. Dorman]
- Fleming, Alastair**, 'The KdmB-EcoA-RpdA-SntB chromatin complex binds regulatory genes and coordinates fungal development with mycotoxin synthesis', *Nucleic Acids Research*, 50, 17 (2022), 9797-9813 [B. Karahoda, L. Pardeshi, K.H. Wong, O. Bayram]
- Foster, Timothy**, 'Allantodapsonе is a pan-inhibitor of *Staphylococcus aureus* adhesion to fibrinogen, loricrin and cytokeratin 10', *Microbiology Spectrum*, 10 (2022), e01117521 [F. Prencipe, A. Alsibae, Z. Khaddem (...), T.J. Foster *et al.*]
- O'Brien, Siobhan**, 'Stress causes interspecific facilitation within a compost community', *Ecology Letters*, 24, 10 (2021), 2169–2177 [E. Hesse, S. O'Brien, A.M. Lujan, D. Sanders, F. Bayer, E. van Veen, D.J. Hodgson, A. Buckling]
- 'Development of liquid culture media mimicking the conditions of sinuses and lungs in cystic fibrosis and health', *F1000Research*, 11 (2022), 1007 [D. Ruhluel, S. O'Brien, J.L. Fothergill, D.r. Neill]

## School of Mathematics

- Britto, Ruth**, 'Graviton particle statistics and coherent states from classical scattering amplitudes', *Journal of High Energy Physics*, 03 (2022), 214 [R. Britto, R. Gonzo, G.R. Jehu]
- 'The SAGEX review on scattering amplitudes chapter 3: mathematical structures in Feynman integrals', *Journal of Physics A*, 55, 44 (2022), 443004 [S. Abreu, R. Britto, C. Duhr]
- 'The diagrammatic coaction', *Proceedings of science, 16th desy workshop on elementary particle physics: loops and legs in quantum field theory 2022 (LL2022)*, Ettal, Germany (2022), 015 [E. Gardi, S. Abreu, R. Britto, C. Duhr, J. Matthew]
- Frolov, Sergey**, 'Massless S matrices for AdS3/CFT2', *JHEP*, 04 (2022), 06 [S. Frolov, A. Sfondrini]
- 'Mirror thermodynamic Bethe ansatz for AdS3/CFT2', *JHEP*, 03 (2022), 138 [S. Frolov, A. Sfondrini]
- 'New dressing factors for AdS3/CFT2', *JHEP*, 04 (2022), 162 [S. Frolov, A. Sfondrini]
- Manschot, Jan**, 'Scaling black holes and modularity', *Journal of High Energy Physics*, 22, 03 (2022), 1 [A. Chattopadhyaya, J. Manschot, S. Mondal]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- Mozgovoy, Sergey**, 'Operadic approach to wall-crossing', *Journal of Algebra* (2022) [S. Mozgovoy]
- Oldham, Elizabeth**, 'The Bridge21 framework: impact on teachers and implications for equitable, inclusive classrooms', *ATEE Spring Conference 2020-2021*, eds M. Ranieri, L. Menichetti, S. Cuomo, D. Parmigiani, M. Pellegrini, Florence, Italy, Firenze University Press (2021), 151-153 [A. Bray, J.R. Byrne, B. Tangney, E. Oldham]
- 'The trajectory of computer science education policy in Ireland: a document analysis narrative', *European Journal of Education*, 57, 3 (2022), 512-529 [C. Connolly, J. Byrne, E. Oldham]
- 'An exploration of the use of structured reflection tasks to surface prospective teachers' awareness of TPACK', *Twelfth Congress of the European society for Research in Mathematics Education (CERME12)*, eds J. Hodgen, E. Geraniou, G. Bolondi, F. Ferretti, Bolzano, Italy, Free University of Bozen-Bolzano and ERME (2022), 2514-2516 [A. Bray, E. Oldham]
- 'Computing in the Irish school curriculum: what can we learn from a fifty-year adventure?', *ITICSE 22: Innovation and Technology in Computer Science Education*, Dublin, Ireland, Association for Computing Machinery (2022), 1-1 [E. Oldham]
- 'Undergraduate mathematics students' reflections on school mathematics curricula after a major curriculum change in Ireland', *Building on the past to prepare for the future, 16th international conference of the mathematics education for the future project*, eds J. Morska, A. Rogerson, Cambridge, England, WTM Verlag für wissenschaftliche Texte und Medien, Münster (2022), 378-383 [E. Oldham, A. Bray]
- 'A brief history of K-12 computer science education in Ireland', *International Journal of Computer Science Education in Schools*, 6, 1 (2023), 3-34 [R. Faherty, K. Nolan, K. Quille, B. Becker, E. Oldham]
- Parfrey, Kyle**, 'Beamed emission from a neutron-star ULX in a GRRMHD simulation', *The Astrophysical Journal Letters*, 917, 2 (2021), 31 [D. Abarca, K. Parfrey, W. Kluzniak]
- 'Synthetic gamma-ray lightcurves of Kerr black-hole magnetospheric activity from particle-in-cell simulations', *Astronomy and Astrophysics*, 650 (2021), 163 [B. Crinquand, B. Cerutti, G. Dubus, K. Parfrey, A. Philippov]
- Peardon, Michael**, 'Optimizing distillation for charmonium and glueballs', *Proceedings of the 38th international symposium on lattice field theory* (2021), arXiv:2112.01964 [F. Knechtli, T. Korzec, M. Peardon, J.A. Urrea Niño]
- Shatashvili, Samson**, 'Characters, coadjoint orbits and Duistermaat-Heckman integrals', *Journal of Geometry and Physics*, 170, 104386 (2021), <http://hdl.handle.net/2262/98611> [A. Alekseev, S.L. Shatashvili]
- 'On spectral cover equations in Simpson integrable systems', *Progress in Mathematics*, 340 (2021), 271-281 [A.A. Gerasimov, S.L. Shatashvili]
- Sint, Stefan**, 'FLAG Review 2021', *European Physical Journal C*, 82, 10 (2022), <http://dx.doi.org/10.1140/epjc/s10052-022-10536-1> [Y. Aoki, T. Blum, G. Colangelo, S. Collins, M.D. Morte, U. Wenger, H. Wittig]
- 'Determination of  $\alpha_s(m_Z)$  by the non-perturbative decoupling method', *European Physical Journal C*, 82, 12 (2022), <http://dx.doi.org/10.1140/epjc/s10052-022-10998-3> [M. Dalla Brida, A. Nada, A. Ramos, S. Sint, R. Sommer]
- Soodhalter, Kirk**, 'Flow in a large wind field with multiple actuators in the presence of constant vorticity', *Physics of Fluids* (2022), <http://hdl.handle.net/2262/101097> [S.L. Basu, K. Soodhalter, B. Fitzgerald, B. Basu]
- 'A note on augmenting unprojected Krylov subspace methods', *Electronic Transactions on Numerical Analysis*, 55 (2022), 532-546 [K.M. Soodhalter]
- 'Subspace recycling-based regularization methods', *SIAM Journal on Matrix Analysis and Applications*, 4 (2021), 1480-1505 [R. Ramlau, K.M. Soodhalter, V. Hutterer]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- Wendland, Katrin**, 'Folding of Hitchin systems and crepant resolutions', *International Mathematics Research Notices*, 2022, 11 (2022), 8370-8419 [Fl. Beck, R. Donagi, K. Wendland]
- Zaitsev, Dmitri**, 'Q-effectiveness for holomorphic subelliptic multipliers', *Pure Appl Math Q*, 18, 2 (2022), 617-637 [S.-Y. Kim, D. Zaitsev]

## School of Natural Sciences

### BOTANY

- Caldararu, Silvia**, 'Why are Arctic shrubs becoming more nitrogen limited?', *New Phytologist*, 233, 2 (2022), 585-587 [L.E. Street, S. Caldararu]  
'The three major axes of terrestrial ecosystem function', *Nature*, 598, 7881 (2021), 468-472 [M. Migliavacca, T. Musavi, M.D. Mahecha (...), J. Peters, K. Anderson]
- Collier, Marcus**, 'Anthropogenic induced beta diversity in plant-pollinator networks: dissimilarity, turnover, and predictive power', *Frontiers in Ecology and Evolution*, 10 (2022), 806615 [C. White, M.J. Collier, J.C. Stout]  
'Spatial variability of urban forest topsoil properties: towards representative and robust sampling design', *Open Research Europe* (2021), 00-00 [N. Galle, W. Brinton, R. Vos, F. Duarte, M.J. Collier, C. Ratti, F. Pilla]  
'Urban transitions towards nature-based solutions', *Urban Forestry and Urban Greening*, 74 (2022), <https://doi.org/10.1016/j.ufug.2022.127663> [I. Zwierzchowska, C. Cortinovis, M.J. Collier, A. Mizgajski]  
*A practical guide to using reflexive monitoring for nature-based solutions: a connecting nature guidebook*, Brussels, European Commission, DG Research and Innovation (2022), 76 [M. Lodder, K. Allaert, W. Mulders (...), M.J. Collier *et al.*]  
*A practical guide to using co-production for nature-based solutions*, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7501980> [C. van der Have, K. Hölscher, M. Lodder (...), M.J. Collier *et al.*]  
*Impact assessment: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7503843> [A. Dumitru, D. Tomé Lourido, M.J. Collier, S. Connop, G. Dick, M.-L. Rhodes, R. Sermepezi, C. Young]  
*Technical solutions: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7503843> [S. Connop, C. Nash, M.J. Collier]  
*Financing and business models: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7503937> [S. McQuaid, I. Fletcher, M.J. Collier]  
*Reflexive monitoring: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7503980> [M. Lodder, K. Allaert, K. Hölscher, I. Notermans, N. Frantzeskaki, M.J. Collier]  
*Governance: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7504020> [P. Vandergert, K. Hölscher, S. McQuaid, M.J. Collier]  
*Co-production: a connecting nature guidebook*, Final, Brussels, DG Research and Innovation (2022) [K. Hölscher, N. Frantzeskaki, M. Lodder, K. Allaert, I. Notermans, M.J. Collier]
- Gray, Nicholas**, *Activated sludge: developments and sustainable solutions*, First, London, World Scientific (2023), 1-607 [N.F. Gray]
- Hodkinson, Trevor**, 'Assessing genotypic and environmental effects on endophyte communities of *Fraxinus* (ash) using culture dependent and independent DNA sequencing', *Journal of Fungi*, 7, 7 (2021), 565 [A. Lahiri, B.R. Murphy, T.R. Hodkinson]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'First report of the ash sawfly, *Tomostethus nigritus*, established on *Fraxinus excelsior* in the Republic of Ireland', *Insects*, 13, 1 (2022), 6 [E. Soldi, E. Fuller, A.M.M. Tiley, A.K. Murchie, T.R. Hodkinson]
- 'Genetic diversity and structure of a diverse population of *Picea sitchensis* using genotyping-by-sequencing', *Forests*, 19, 9 (2022), 1511 [T. Byrne, N. Farrelly, C. Kelleher, T.R. Hodkinson, S.L. Byrne, S. Barth]
- 'Phylogenetics of global *Camellia* (Theaceae) based on three nuclear regions and its implications for systematics and evolutionary history', *Journal of Systematics and Evolution* (2022), <https://doi.org/10.1111/jse.12> [D-W. Zhao, T.R. Hodkinson, J.R. Parnell]
- 'Fungal endophytes isolated from *Elymus repens*, a wild relative of barley, have potential for biological control of *Fusarium culmorum* and *Pyrenophora teres* in barley', *Pathogens*, 11, 10 (2022), 1097 [A.K. Høyer, H.J.L. Jørgensen, T.R. Hodkinson, B. Jensen]
- 'New species and a revision of the genus *Peperomia* (Piperaceae) in Thailand', *Thai Forest Bulletin (Botany)*, 50, 2 (2022), 104-119 [C. Suwanphakdee, T.R. Hodkinson, P. Chantaranonthai]
- 'Assessment of morphological, anatomical and palynological variation in the medicinal plant *Disporopsis longifolia* Craib (Asparagaceae) for botanical quality control', *Plants*, 12 (2) (2023), 259 [A. Sarapan, T.R. Hodkinson, C. Suwanphakdee]
- 'Ash dieback and other pests and pathogens of *Fraxinus* on the island of Ireland', *Biology and Environment: Proceedings of the Royal Irish Academy*, 122, 2 (2022), 85-122 [E. Soldi, A. Tiley, R. O'Hanlon, B.R. Murphy, T.R. Hodkinson]
- Kelly, Daniel**, 'Rapid tufa deposition and bryophyte growth rates in Irish petrifying springs', *Journal of Bryology*, 43, 2 (2021), 162-174 [M.D. Lyons, D.L. Kelly]
- '*Magnolia* (Magnoliaceae) in Honduras: a synopsis with six new taxa', *Phytotaxa*, 570, 2 (2022), 109-149 [J.A. Vazquez-Garcia, D.L. Kelly, D.A. Mejia-Valdivieso, W. Morales, A. Dahua-Machoa, H. Vega-Rodriguez, A.S.O. Pena]
- Knapp, Jessica**, 'Monitoring bee health in European agro-ecosystems using wing morphology and fat bodies', *One Ecosystem*, 6 (2021), e63653. [M. Vanderplank, D. Michez, M. Albrecht, E. Attridge, J.C. Stout, E.A. Straw, G. Tamburini, Y. Toktas, M. Gérard]
- 'CropPol: a dynamic, open and global database on crop pollination', *Ecology*, 103, 3 (2022) [A. Allen-Perkins, A. Magrach, M. Dainese, L.A. Garibaldi, D. Kleijn, I. Bartomeus]
- Martini, Francesco**, 'Variation in biotic interactions mediates the effects of masting and rainfall fluctuations on seedling demography in a subtropical rainforest', *Journal of Ecology*, 110, 4 (2022), 762-771 [F. Martini, C-H. Chang'Yang, I-F. Sun]
- 'Remote assessments of human pressure on biodiversity may miss important human threats', *Integrative Conservation*, 1, 1 (2022), 52-59 [C. Mammides, F. Martini, C. Kounnamas]
- 'Effects of plant diversity and leaf traits on insect herbivory in plantation and natural forests', *Forest Ecology and Management*, 509 (2022), 120085 [F. Martini, Francesco, I-F. Sun, Y-Y. Chen]
- 'Seed viability testing for research and conservation of epiphytic and terrestrial orchids', *Botanical Studies*, 63, 1 (2022), <http://dx.doi.org/10.1186/s40529-022-00333-0> [N. Pradhan, X. Fan, F. Martini, H. Chen, H. Liu, J. Gao, U.M. Goodale]
- 'Abiotic drivers of seedling bank diversity in subtropical forests of southern China', *Frontiers in Ecology and Evolution*, 9 (2021), <http://dx.doi.org/10.3389/fevo.2021.784036> [F. Martini, C. Zou, X. Song, U.M. Goodale]
- 'Elevation and micro environmental conditions directly and indirectly influence forests-soil seed bank communities', *Global Ecology and Conservation*, 26 (2021), e01443 [C. Zou, F. Martini, S-W. Xia, D. Castillo-Diaz, U.M. Goodale]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Plant apparency drives leaf herbivory in seedling communities across four subtropical forests', *Oecologia*, 195, 3 (2021), 575-587 [F. Martini, S.T. Aluthwattha, C. Mammides, M. Armani, U.M. Goodale]
- McElwain, Jennifer**, 'Freeze tolerance influenced forest cover and hydrology during the Pennsylvanian', *Proceedings of the National Academy of Sciences of the United States of America*, 118, 42 (2021), <http://dx.doi.org/10.1073/pnas.2025227118> [W.J. Matthaesus, S.I. Macarewich, J.D. Richey (...), J.C. McElwain *et al.*]
- 'Palaeobotanical experiences of plant diversity in deep time. 2: how to measure and analyse past plant biodiversity', *Palaeogeography, Palaeoclimatology, Palaeoecology*, 580 (2021), <http://dx.doi.org/10.1016/j.palaeo.2021.110618> [H.S. Pardoe, C.J. Cleal, C.M. Berry (...), J.C. McElwain *et al.*]
- 'Searching for a nearest living equivalent for Bennettitales: a promising extinct plant group for stomatal proxy reconstructions of Mesozoic  $pCO_2$ ', *GFF*, 143, 2-3 (2021), 190-201 [M. Steinhorsdottir, C. Elliott-Kingston, M. Coiro, J.C. McElwain]
- 'Stems matter: xylem physiological limits are an accessible and critical improvement to models of plant gas exchange in deep time', *Frontiers in Ecology and Evolution*, 10, 955066 (2022), <http://dx.doi.org/10.3389/fevo.2022.955066> [W.J. Matthaesus, I.P. Montanez, J.C. McElwain, J.P. Wilson, J.D. White]
- 'CO<sub>2</sub>-induced biochemical changes in leaf volatiles decreased fire-intensity in the run-up to the Triassic-Jurassic boundary', *New Phytologist*, 235, 4 (2022), 1442-1454 [S.J. Baker, R.A. Dewhurst, J.C. McElwain, M. Haworth, C.M. Belcher]
- 'Jennifer McElwain', *Current biology: CB*, 31, 12 (2021), R772-R774 [J. McElwain]
- Mitchell, Fraser**, *Monitoring of vegetation change through permanent woodland plots in Killarney national park: a 30-year review. Irish wildlife manuals, No.141*, Dublin, National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland (2022), 1-66 [J.J. Hamilton, F.J.G. Mitchell, D.L. Kelly]
- Moonlight, Peter**, 'An updated checklist and key to the species of Bolivian begonia, including one new species', *Edinburgh Journal of Botany*, 79 (2022), 1-66 [P. Moonlight, A.F. Fuentes]
- 'Defining biologically meaningful biomes through floristic, functional, and phylogenetic data', *Frontiers in Ecology and Evolution*, 9 (2021), <http://dx.doi.org/10.3389/fevo.2021.723558> [D. Cardoso, P.W. Moonlight, G. Ramos (...), T. Pennington, T.E. Särkinen]
- 'Identifying hotspots for ecosystem restoration across heterogeneous tropical savannah-dominated regions', *Philosophical Transactions of the Royal Society B: Biological Sciences*, 387, 1867 (2022), 20210075 [K. Lewis, F. de V. Barros, P.W. Moonlight (...), T. Pennington, L. Rowland]
- Parnell, John**, 'Orchidaceae 3', *Flora of Thailand*, eds K. Chayamarit, H. Balslev, M. Newman (...), J. Parnell *et al.*, Bangkok, The Forest Herbarium, Department of National Parks, Wildlife and Plant Conservation. (2022), 671-1015+LXXXVIII [H.A.E. Pederson, K-O. Bunpha, N. Tetsana (...), T. Seelanan, P. Rattanakrajang]
- 'Annonaceae', *Flora of Thailand 16 (1)*, eds K. Chayamarit, H. Balslev, M. Newman (...), J. Parnell *et al.* Bangkok, The Forest Herbarium, Department of National Parks, Wildlife and Plant Conservation (2022), 1-332 + XLpp [D.A. Johnson, N.A. Murray]
- Stout, Jane**, 'Globalisation and pollinators: pollinator declines are an economic threat to global food systems', *People and Nature* (2022), <http://hdl.handle.net/2262/98393> [J.T. Murphy, T.D. Breeze, B. Willcox, S. Kavanagh, J.C. Stout]
- 'Pollinator selection against toxic nectar as a key facilitator of a plant invasion', *Philosophical Transactions of the Royal Society B: Biological Sciences*, 377, 1853 (2022), 20210168 [P.A. Egan, P.C. Stevenson, J.C. Stout]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'From science to society: implementing effective strategies to improve wild pollinator health', *Philosophical Transactions of the Royal Society B: Biological Sciences*, 377, 1853 (2022), 20210165 [J.C. Stout, L.V. Dicks]
- 'CropPol: a dynamic, open and global database on crop pollination', *Ecology*, 103, 3 (2022) [A. Allen-Perkins, A. Magrath, M. Dainese, L.A. Garibaldi, D. Kleijn, I. Bartomeus]
- 'Applying ecosystem accounting to develop a risk register for peatlands and inform restoration targets at catchment scale: a case study from the European region', *Restoration Ecology* (2022), <http://hdl.handle.net/2262/98613> [C.A. Farrell, L. Coleman, D. Norton (...), F. Smith, J.C. Stout]
- 'Anthropogenic induced beta diversity in plant-pollinator networks: dissimilarity, turnover, and predictive power', *Frontiers in Ecology and Evolution*, 10 (2022), 806615 [C. White, M.J. Collier, J.C. Stout]
- 'Does landscape structure affect the presence of woodland specialist pollinators in farmland? Implications for agri-environment scheme design', *Biology and Environment: Proceedings of the Royal Irish Academy*, 122B (2022), 17-37 [S. Ruas, R. Kelly, K.S.D. Ahmed (...), J.C. Stout, J. Moran]
- 'Biocircularity: a framework to define sustainable, circular bioeconomy', *Circular Economy and Sustainability* (2022), <http://hdl.handle.net/2262/101071> [N.M. Holden, A.M. Neill, J.C. Stout, D. O'Brien, M.A. Morris]
- 'Assessing availability of European plant protection product data: an example evaluating basic area treated', *Peer J* (2022), <http://hdl.handle.net/2262/101070> [A. López-Ballesteros, A. Delaney, J. Quirke, J.C. Stout, M. Saunders, J. Carolan, B. White, D.A. Stanley]
- 'Stem-nesting hymenoptera in Irish farmland: empirical evaluation of artificial trap nests as tools for fundamental research and pollinator conservation', *Journal of Pollination Ecology*, 32 (2022), 110-123 [S. Hodge, I. Bottero, R. Dean, S. Maher, J.C. Stout]
- 'Examining the relationship between farmer participation in an agri-environment scheme and the quantity and quality of semi-natural habitats on Irish farms', *Land Use Policy*, 120, 106284 (2022), <http://dx.doi.org/10.1016/j.landusepol.2022.106284> [A. Tsakiridis, C. O'Donoghue, M. Ryan, P. Cullen, J. Stout]
- 'Conceptual integration of ecosystem services and natural capital within Irish national policy: an analysis over time and between policy sectors', *Ecosystem Services*, 57, 101468 (2022), <http://dx.doi.org/10.1016/j.ecoser.2022.101468> [A.M. Neill, C. O'Donoghue, J.C. Stout]
- 'Design and planning of a transdisciplinary investigation into farmland pollinators: rationale, co-design, and lessons learned', *Sustainability*, 4, 17 (2022), 10549 [S. Hodge, O. Schweiger, A-M. Klein (...), M.J.F. Brown, J.C. Stout]
- 'Conserving diversity in Irish plant-pollinator networks', *Ecology and Evolution*, 12 (2022), e9347 [L. Russo, Ú. Fitzpatrick, M. Larkin, S. Mullen, E. Power, D. Stanley, C. White, A. O'Rourke, J.C. Stout]
- 'Glyphosate used as desiccant contaminates plant pollen and nectar of non-target plant species', *Heliyon*, 8, 12 (2022), <http://dx.doi.org/10.1016/j.heliyon.2022.e12179> [E. Zioga, B. White, J.C. Stout]
- 'Characterization factors to assess land use impacts on pollinator abundance in life cycle assessment', *Environmental Science and Technology*, 57, 8 (2023), 3445-3454 [E.M. Alejandre, L. Scherer, J.B. Guinée, M.A. Aizen, M. Albrecht, B.A. Woodcock, P.M. van Bodegom]
- 'Stem-nesting hymenoptera in Irish farmland: empirical evaluation of artificial trap nests as tools for fundamental research and pollinator conservation', *Journal of Pollination Ecology*, 31 (2022), 110-123 [S. Hodge, I. Bottero, R. Dean, S. Maher, J.C. Stout]
- 'Does landscape structure affect the presence of woodland specialist pollinators in farmland? Implications for agri-environment scheme design', *Biology and Environment*, 122B, 1 (2022), 17-37 [S. Ruas, R. Kelly, K.S.D. Ahmed, S. Maher, J.C. Stout, J. Moran]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Bumblebees can be exposed to the herbicide glyphosate when foraging', *Environmental Toxicology and Chemistry*, 41, 10 (2022), 2603-2612 [L.J. Thompson, S. Smith, J.C. Stout, B. White, E. Zioga, D.A. Stanley]
- 'Contrasting effects of fungicide and herbicide active ingredients and their formulations on bumblebee learning and behaviour', *Journal of Experimental Biology*, 226, 6 (2023), jeb245180 [L.J. Thompson, J.C. Stout, D.A. Stanley]
- 'Spatial analysis of cultural services using social media data: a guide to model selection for research and practice', *One Ecosystem*, 8 (2023), e95685 [A.M. Neill, C. O'Donoghue, J.C. Stout]
- 'Reconciling climate action with the need for biodiversity protection, restoration and rehabilitation', *Science of the Total Environment*, 857, 1 (2023), 159316 [C.E. Gorman, A. Torsney, A. Gaughran, C. McKeon, C. Farrell, C. White, I. Donohue, J. Stout, Y.M. Buckley]
- 'Pesticide mixtures detected in crop and non-target wild plant pollen and nectar', *Science of the Total Environment*, 879 (2023), 162971 [E. Zioga, B. White, J.C. Stout]
- Waldren, Stephen**, *EcoMetrics - environmental supporting conditions for groundwater-dependent terrestrial ecosystems*, Wexford, Ireland, Environmental Protection Agency (2022), 1-54 [L. Gill, S. Bhatnagar, E. Bijkerk (...), S. Waldren et al.]
- Williams, Michael**, 'Review', *The International Journal of Life Cycle Assessment*, 25 (2021), 1942-1956 [M. Porto Costa, D. Chadwick, S. Saget, R. Rees, M. Williams, D. Styles]
- 'Research', *Sustainable Production and Consumption*, 34 (2022), 330-340 [S. Saget, M. Porto Costa, K. Black, P.P.M. Iannetta, M. Reckling, D. Styles, M. Williams]

## GEOGRAPHY

- Akers, Pete**, 'Arctic sea-ice loss fuels extreme European snowfall', *Nature Geoscience*, 14, 5 (2021), 283-288 [H. Bailey, A. Hubbard, E.S. Klein, K-R. Mustonen, P.D. Akers, H. Marttila, J.M. Welker]
- 'Sunlight-driven nitrate loss records Antarctic surface mass balance', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-022-31855-7> [P.D. Akers, J. Savarino, N. Caillon (...), O. Magand, J. Martins]
- 'Photolytic modification of seasonal nitrate isotope cycles in East Antarctica', *Atmospheric Chemistry and Physics*, 22, 24 (2022), 15637-15657 [P.D. Akers, J. Savarino, N. Caillon, O. Magand, E. Le Meur]
- Cugurullo, Federico**, 'Social implications of autonomous vehicles: a focus on time', *AI and Society*, 37 (2022), 791-800 [C. McCarroll, F. Cugurullo]
- Davies, Anna**, 'Playing for keeps: designing serious games for climate adaptation planning education with young people', *Urban Planning*, 7, 2 (2022), <http://dx.doi.org/10.17645/up.v7i2.5113> [S. Hügel, A.R. Davies]
- 'Seeds of change? Social practices of urban community seed sharing initiatives for just transitions to sustainability', *Local Environment*, 27, 6 (2022), 1-16 [A.R. Davies, M. Rut, J. Feeney]
- 'Creating careful circularities: community composting in New York City', *Transactions of the Institute of British Geographers*, 47, 2 (2022), 529-546 [O. Morrow, A.R. Davies]
- 'Assessing the sustainability impacts of food sharing initiatives: user testing the toolshed SIA', *Frontiers in Sustainable Food Systems*, 6 (2022), 1-19 [S.G. Mackenzie, A.R. Davies]
- 'Towards urban food governance for more sustainable and just futures', *Routledge handbook of urban food governance*, eds A. Moragues-Faus, J.K. Clark, J. Battersby, A. Davies, London, Routledge (2022), 1-19 [A. Moragues-Faus, J.K. Clark, J. Battersby, A. Davies]
- 'Creating fairer futures for sustainability transitions', *Geography Compass*, 16, 10 (2022), 1-13 [L. Fitzgerald, A. Davies]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

**Edwards, Robin**, 'Sedimentary indicators of relative sea-level changes-low energy', *Reference module in earth systems and environmental sciences*, Elsevier (2022), <https://doi.org/10.1016/B978-0-323-99931-1.00017-9> [R. Edwards]

**Gillmor, Desmond**, 'The promotion and protection of geography in Irish education', *Geographical Viewpoint*, 44 (2021), 39-46 [D.A. Gillmor]

'Old Drumlease: an important ancient ecclesiastical site in County Leitrim', *Journal of the Federation of Local History Societies*, 26 (2021), 138-141 [D.A. Gillmor]

**Jackson, Margaret**, 'Dynamics of warming during the last deglaciation in high-elevation regions of Eastern Equatorial Africa', *Quaternary Science Reviews* (2022), <https://doi.org/10.1016/j.quascirev.2022.107416> [S. Garelick, J. Russell, A. Richards (...), M.S. Jackson *et al.*]

'A 10Be dated record of glacial retreat in Connemara, Ireland, after the last glacial maximum and implications for regional climate', *Palaeogeography, Palaeoclimatology, Palaeoecology* (2022), <https://doi.org/10.1016/j.palaeo.2022.110901> [A. Foreman, G.R.M. Bromley, B.H. Hall, M.S. Jackson]

'Last glacial maximum reconstructions of Rwenzori mountain glaciers', *Paleoceanography and Paleoclimatology* (2023), e2022PA004 [A. Doughty, M. Kelly, J. Russell, M. Jackson, B. Anderson, J.W. Chipman, B. Nakileza]

**Murphy, Susan**, 'The relationship between poverty and prosperity: a feminist relational account', *Journal of Global Ethics*, 18, 1 (2022), 82-99 [S.P. Murphy]

'Just transition frames: recognition, representation, and distribution in Irish beef farming', *Journal of Rural Studies*, 94 (2022), 150-160 [S.P. Murphy, S. Cannon, L. Walsh]

'An exploration of female academics: opportunities for career progression into leadership roles in Tanzanian higher learning institutions', *Asian studies international journal, 9th international conference on gender and women's studies*, National University of Singapore Society (2022), 73-81 [A. Mwakitalu, S.P. Murphy, J. Roche]

'Exploring female academics underrepresentation in senior leadership positions: case of public and private universities in Tanzania', *ICSD, International Conference in Sustainable Development*, (2022), 1-9 [A. Mwakitalu, S.P. Murphy, J. Roche]

'Hard borders and soft agreements: evaluating governance within the global compact for migration', *Third World Quarterly* (2022), 1-18 [S.P. Murphy]

**O'Callaghan, Cian**, 'The permanence of temporary urbanism: normalising precarity in austerity London, by Mara Ferreri', *Journal of Urban Affairs* (2022), 1-3 [C. O'Callaghan]

**Sokol, Martin**, 'Financialisation, regional economic development and the coronavirus crisis: a time for spatial monetary policy?', *Cambridge Journal of Regions, Economy and Society*, 15, 1 (2021), 75-92 [M. Sokol, L. Pataccini]

## GEOLOGY

**Chew, David**, 'A two-stage, fault-controlled paleofluid system at the southern termination of the Gypsum Valley salt wall, Paradox Basin, Colorado, USA', *Basin Research* (2022), <http://dx.doi.org/10.1111/bre.12649> [L.R. Lueck, M.P. Fischer, N.J. Williams, K. Drost, J.P. Dodd, D.M. Chew]

'A new approach to palynostratigraphy of the middle-late Famennian Gafo Formation, southern sector of the Pulo do Lobo Domain, SW Iberia (Portugal and Spain)', *Geological Magazine*, 159, 8 (2022), 1454-1470 [M. Mendes, Z. Pereira, N. Vaz (...), R. Jorge, D. Chew]

'Cretaceous magmatism in the Antarctic peninsula and its tectonic implications', *Journal of the Geological Society* (2022), <http://dx.doi.org/10.1144/jgs2022-067> [J. Bastias, R. Spikings, T. Riley, D. Chew, A. Grunow, A. Ulianov, M. Chiaradia, A. Burton-Johnson]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Collision with Gondwana or with Baltica? Ordovician magmatic arc volcanism in the Marmarosh Massif (Eastern Carpathians, Ukraine)', *International Journal of Earth Sciences*, 111, 7 (2022), 2181-2198 [A. Gaweda, K. Szopa, J. Golonka (...), D. Chew *et al.*]
- 'A reassessment of Arundian-Holkerian (Viséan) carbonates in South Cumbria, UK', *Proceedings of the Geologists' Association*, 133, 3 (2022), 227-249 [M.W. Hounslow, I.D. Somerville, P. Cózar, D. Chew, F. Drakou]
- 'Variscan magmatic evolution of the Strandja Zone (southeast Bulgaria and northwest Turkey) and its relationship to other north Gondwanan margin terranes', *Gondwana Research*, 109 (2022), 253-273 [A. Salacinska, I. Gerdjikov, A. Kounov (...), D. Chew *et al.*]
- 'Permian lamprophyres from the western Carpathians: a review', *Lamprophyres, lamproites and related rocks: tracers to supercontinent cycles and metallogensis*, eds L. Krmicek, N.V. Chalapathi Rao, Springer Geology (2021), SP513-2020-237 [J. Spišiak, L. Vetráková, D. Chew, Š. Ferenc, V. Šimonová, J. Butek, T. Mikuš]
- 'Apatite U-Pb dating with common Pb correction using LA-ICP-MS/MS', *Geostandards and Geoanalytical Research*, 45, 4 (2021), 621-642 [D. Xiang, Z. Zhang, T. Zack, D. Chew, Y. Yang, L. Wu, J. Hogmalm]
- 'Tracing pre-mesozoic tectonic sutures in the crystalline basement of the protocarpathians: evidence from the exotic blocks from subsilesian nappe, outer western Carpathians, Poland', *Minerals*, 11, 6 (2021), 571 [J. Golonka, A. Gaweda, A. Waskowska, D. Chew, K. Szopa, F. Drakou]
- 'The slishwood division and its relationship with the dalradian rocks of the Ox mountains', *A field guide to the geology of western Ireland*, ed P.D. Ryan, Springer Geology (2022), 73-106 [J.S. Daly, M.J. Flowerdew, D.M. Chew, I.S. Sanders]
- 'The geology of western Ireland: a record of the 'birth' and 'death' of the lapetus ocean', *a field guide to the geology of western Ireland*, ed P.D. Ryan, Springer Geology (2022), 405-421 [P.D. Ryan, D.M. Chew, R.A. Cliff (...), R. Scanlon, B.W.D. Yardley]
- 'The central Ox mountains', *A field guide to the geology of western Ireland*, ed P.D. Ryan, Springer Geology (2022), 107-130 [P.D. Ryan, K. McCaffrey, D.M. Chew, J.R. Graham, B. Long]
- 'The basement and dalradian rocks of the north Mayo inlier', *A field guide to the geology of western Ireland*, ed P.D. Ryan, Springer Geology (2022), 9-72 [J.S. Daly, D.M. Chew, M.J. Flowerdew, J.F. Menuge, R. Fitzgerald, C.A. McAteer, R. Scanlon]
- 'Role of sediment in generating contemporaneous, diverse 'type' granitoid magmas', *Geology*, 50, 4 (2022), 427-431 [S. Li, C.F. Miller, W. Tao, W. Xiao, D. Chew]
- 'Central European variscan basement in the outer Carpathians: a case study from the magura nappe, outer western Carpathians, Poland', *Minerals*, 11, 3 (2021), 1-18 [A. Gaweda, K. Szopa, J. Golonka, D. Chew, A. Waskowska]
- 'Apatite as an alternative petrochronometer to trace the evolution of magmatic systems containing metamict zircon', *Contributions to Mineralogy and Petrology*, 176, 9 (2021), <http://dx.doi.org/10.1007/s00410-021-01827-z> [H-C. Yu, K-F. Qiu, C.J. Hetherington, D. Chew, Y-Q. Huang, D-Y. He, J-Z. Geng, H-Y. Xian]
- 'Detrital apatite geochemistry and thermochronology from the oligocene/miocene alpine foreland record the early exhumation of the Tauern Window', *Basin Research*, 33, 6 (2021), 3021-3044 [J. Hülscher, E.R. Sobel, V. Verwater, P. Groß, D. Chew, A. Bernhardt]
- 'Two stages of late carboniferous to triassic magmatism in the strandja zone of Bulgaria and Turkey', *Geological Magazine*, 158, 12 (2021), 2151-2164 [A. Salacinska, I. Gerdjikov, A. Gumsley, K. Szopa, D. Chew, A. Gaweda, I. Kocjan]
- 'Uranium-lead dates from livian (middle viséan) bentonites of the Namur-Dinant basin, Belgium', *Newsletters on Stratigraphy*, 54, 3 (2021), 317-334 [M.A. Pointon, D.M. Chew, M. Ovtcharova, B. Delcambre, G.D. Sevastopulo]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'From sink to source: using offshore thermochronometric data to extract onshore erosion signals in Namibia', *Basin Research*, 33, 2 (2021), 1580-1602 [M. Wildman, K. Gallagher, D. Chew, A. Carter]
- 'Permian-Triassic magmatic evolution of granitoids from the southeastern central Asian orogenic belt: implications for accretion leading to collision', *Science China Earth Sciences*, 64, 5 (2021), 788-806 [D. Wu, S. Li, D. Chew, T. Liu, D. Guo]
- 'Timescales of magmatism and metamorphism in the Connemara caledonides: insights from the thermal aureole of the Dawros-Currywongaun-Doughruagh complex, western Ireland', *Geological Magazine*, 158, 12 (2021), 2139-2150 [B. O'Driscoll, D.M. Chew]
- 'Permian A-type rhyolites of the drienok nappe, inner western Carpathians, Slovakia: tectonic setting from *in situ* zircon U-Pb LA-ICP-MS dating', *Geologica Carpathica*, 73, 2 (2022), 123-136 [M. Ondrejka, R. Vojtko, M. Putis (...), D.M. Chew *et al.*]
- 'Wildfires and monsoons: cryptic drivers for highly variable provenance signals within a carboniferous fluvial system', *Geosciences (Switzerland)*, 12, 1 (2022), <http://dx.doi.org/10.3390/geosciences12010020> [B. Anders, S. Tyrrell, D. Chew, G. O'Sullivan, C. Mark, J. Graham, E. Badenszki, J. Murray]
- 'Spatial variation in provenance signal: identifying complex sand sourcing within a carboniferous basin using multiproxy provenance analysis', *Journal of the Geological Society*, 179, 1 (2022), <http://dx.doi.org/10.1144/jgs2021-045> [B. Anders, S. Tyrrell, D. Chew, C. Mark, G. O'Sullivan, J. Murray, J.R. Graham, E. Badenszki]
- 'Deep-versus shallow-marine sandstone provenance in the mid-carboniferous Clare basin, western Ireland', *Journal of the Geological Society*, 178, 6 (2021), <http://dx.doi.org/10.1144/jgs2020-216> [M. Nauton-Fourteu, S. Tyrrell, D.M. Chew, F. Drakou, K. Pfaff, Z. Jobe]
- 'Apatite U-Pb thermochronology: a review', *Minerals*, 11, 10 (2021), <http://dx.doi.org/10.3390/min11101095> [D.M. Chew, R.A. Spikings]
- 'The provenance of middle Jurassic to cretaceous sediments in the Irish and celtic sea basins: tectonic and environmental controls on sediment sourcing', *Journal of the Geological Society*, 178, 5 (2021), <http://dx.doi.org/10.1144/jgs2020-247> [O. McCarthy, B. Fairey, P. Meere (...), D. Chew *et al.*]
- 'Petrogenesis of the Limerick igneous suite: insights into the causes of post-eruptive alteration and the magmatic sources underlying the lapetus suture in SW Ireland', *Journal of the Geological Society* (2022), <http://dx.doi.org/10.1144/jgs2022-039> [P. Slezak, M.W. Hitzman, D. van Acken, E. Dunlevy, D. Chew, F. Drakou, M. Holdstock]
- 'Discrimination of thermodynamic and kinetic contributions to the heavy rare earth element patterns in metamorphic garnet', *Journal of Metamorphic Geology* (2022), <http://dx.doi.org/10.1111/jmg.12703> [M.K. Schmolke, R. Halama, D. Chew, C. Heuzé, J. De Hoog, H. Ditterova]
- Coxon, Catherine**, *EcoMetrics - environmental supporting conditions for groundwater-dependent terrestrial ecosystems*, Wexford, Ireland, Environmental Protection Agency (2022), 1-54 [L. Gill, S. Bhatnagar, E. Bijkerk (...), C. Coxon, P. Johnston]
- 'Patterns and drivers of groundwater and stream nitrate concentrations in intensively managed agricultural catchments', *Water*, 14, 9 (2022), 1388 [E. McAleer, C. Coxon, P-E. Mellander, J. Grant, K. Richards]
- 'Flow cytometry and fecal indicator bacteria analyses for fingerprinting microbial pollution in karst aquifer systems', *Water Resources Research*, 58 (2022), e2021WR029840 [L. Vucinic, D. O'Connell, R. Teixeira, C. Coxon, L.W. Gill]
- 'Multiple fluorescence approaches to identify rapid changes in microbial indicators at karst springs', *Journal of Contaminant Hydrology*, 254, 104129 (2023) [L. Vucinic, D. O'Connell, D. Dubber, C. Coxon, L. Gill]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

**Crowley, Quentin**, 'Investigating post-depositional alteration of trace elements in fish scales using tagged and recaptured wild salmon', *Fisheries Research*, 248 (2022), <http://dx.doi.org/10.1016/j.fishres.2021.106207> [E. Tray, D. Brophy, N.O. Maoileidigh, R. Finlay, E. de Eyto, R. Poole, Q.G. Crowley]

'A study of natural radioactivity levels and radon/thoron release potential of bedrock and soil in southeastern Ireland', *International Journal of Environmental Research and Public Health*, 18, 5 (2021), 1-18 [M.M. Aghdam, Q. Crowley, C. Rocha, V. Dentoni, S.D. Pelo, S. Long, M. Savatier]

'A users guide to radon priority areas: examples from Ireland', *Journal of the European Radon Association*, 3 (2022), <http://hdl.handle.net/2262/98442> [M.B. Hughes, J. Elio, Q.G. Crowley]

'Detailed geogenic radon potential mapping using geospatial analysis of multiple geo-variables: a case study from a high-risk area in SE Ireland', *International Journal of Environmental Research and Public Health*, 19 (2022), 15910 [M.M. Aghdam, V. Dentoni, S. Da Pelo, Q. Crowley]

'Using geogenic radon potential to assess radon priority area designation, a case study around Castleisland, Co. Kerry, Ireland', *Journal of Environmental Radioactivity*, 251 (2022), 106956- [M.H. Banrion, J. Elio, Q.G. Crowley]

'A multi-proxy provenance study of late carboniferous to middle Jurassic sandstones in the eastern Sverdrup basin and its bearing on Arctic palaeogeographic reconstructions', *Geosciences*, 13, 1 (2023), 10 [M.A. Pointon, H. Smyth, J.E. Omma (...), Q.G. Crowley *et al.*]

'Wanted dead or alive: skeletal structure alteration of cold-water coral *Desmophyllum pertusum* (*Lophelia pertusa*) from anthropogenic stressors', *Oceans*, 4, 1 (2023), 68-79 [E.T. Krueger, J.V. Büscher, D.A. Hoey, D. Taylor, P.J. O'Reilly, Q.G. Crowley]

**Dickens, Gerald**, 'Late Paleocene to middle Eocene carbon isotope stratigraphy of the northern Negev, southern Israel: potential for paleoclimate reconstructions', *Newsletters on Stratigraphy*, 55, 3 (2022), 361-384 [C.D. Fokkema, S. Buijs, O.M. Bialik (...), G.R. Dickens, A. Sluijs]

'Neogene mass accumulation rate of carbonate sediment across northern Zealandia, Tasman Sea, southwest Pacific', *Paleoceanography and Paleoclimatology*, 37, 2 (2022), <http://dx.doi.org/10.1029/2021PA004294> [R. Sutherland, Z. Dos Santos, C. Agnini (...), G.R. Dickens *et al.*]

'Timing of Eocene compressional plate failure during subduction initiation, northern Zealandia, southwestern Pacific', *Geophysical Journal International*, 229, 3 (2022), 1567-1585 [W.R. Stratford, R. Sutherland, G.R. Dickens (...), T. Westerhold, X. Zhou]

'The late Miocene-early Pliocene biogenic bloom in the eastern equatorial Pacific: new insights from integrated ocean drilling program site U1335', *Paleoceanography and Paleoclimatology*, 37, 3 (2022), <http://dx.doi.org/10.1029/2021PA004313> [D. Reghellin, H.K. Coxall, G.R. Dickens, S. Galeotti, J. Backman]

'A depth-transect of ocean deoxygenation during the Paleocene-Eocene thermal maximum: magnetofossils in sediment cores from the southeast Atlantic', *Journal of Geophysical Research: Solid Earth*, 127, 8 (2022), <http://dx.doi.org/10.1029/2022JB024714> [P. Xue, L. Chang, G.R. Dickens, E. Thomas]

'Absolute paleolatitude of northern Zealandia from the middle eocene to the early Miocene', *Journal of Geophysical Research: Solid Earth*, 127, 9 (2022), <http://dx.doi.org/10.1029/2022JB024736> [E. Dallanave, R. Sutherland, G.R. Dickens (...), S. Etienne, T. von Döbenek]

**Farrell, Una**, 'A long-term record of early to mid-Paleozoic marine redox change', *Science Advances*, 7, 28 (2021), <http://dx.doi.org/10.1126/sciadv.abf4382> [E.A. Sperling, M.J. Melchin, T. Fraser, R.G. Stockey, N.J. Planavsky, J.V. Strauss]

'The composition and weathering of the continents over geologic time', *Geochemical Perspectives Letters*, 17 (2021), 21-26 [A.G. Lipp, O. Shorttle, E.A. Sperling, J.J. Brocks, P.R. Wilby, J. Yang]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'The sedimentary geochemistry and paleoenvironments project', *Geobiology*, 19, 6 (2021), 545-556 [U.C. Farrell, R. Samawi, S. Anjanappa, R. Klykov, D.T. Johnston, E.A. Sperling]
- 'Curation and analysis of global sedimentary geochemical data to inform earth history', *GSA Today*, 31, 5 (2021), 4-9 [A. Mehra, C.B. Keller, T. Zhang, N.J. Tosca, C. Woltz, J.V. Strauss]
- Nicholas, Christopher**, 'Chemostratigraphic and mineralogical examination of the kilwa group claystones, coastal Tanzania: an alternative approach to refine the lithostratigraphy', *African Journal of Earth Sciences*, 197 (2023), 1-22 [R. McCabe, C.J. Nicholas, B. Fitches, D. Wray, T. Pearce]
- Rateau, Rémi**, 'The role of nanocerianite (CeO<sub>2</sub>) in the stability of Ce carbonates at low-hydrothermal conditions', *RSC Advances*, 13, 10 (2023), 6919-6935 [A.M. Szucs, M. Maddin, D. Brien, R. Rateau, J.D. Rodriguez-Blanco]
- Rocha, Carlos**, 'A study of natural radioactivity levels and radon/thoron release potential of bedrock and soil in southeastern Ireland', *International Journal of Environmental Research and Public Health*, 18, 5 (2021), 1-18 [M.M. Aghdam, Q. Crowley, C. Rocha, V. Dentoni, S.D. Pelo, S. Long, M. Savatier]
- 'Reactive solute transport through two contrasting subterranean exit sites in the Ria de Vigo (NW Iberian Peninsula)', *Frontiers in Marine Science*, 8 (2021), 626813 [E. Calvo-Martin, X.A. Álvarez-Salgado, C. Rocha, J.S.P. Ibánhez]
- 'Radium isotopes as tools to characterise nutrient dynamics in a variably stratified temperate fjord', *Marine Chemistry*, 231 (2021), 103934 [M. Savatier, T. Guerra, J.E. Murphy, C. Rocha]
- 'A place for subterranean estuaries in the coastal zone', *Estuarine, Coastal and Shelf Science*, 250 (2021), 107167 [C. Rocha, C.E. Robinson, I.R. Santos, H. Waska, H.A. Michael, H.J. Bokuniewicz]
- 'Rethinking tracer-based (Ra, Rn, salinity) approaches to estimate point-source submarine groundwater discharge (SGD) into coastal systems', *Journal of Hydrology*, 598 (2021), 126247 [M. Savatier, C. Rocha]
- 'Response of nitrate processing to bio-labile dissolved organic matter supply under variable oxygen conditions in a sandy beach seepage face', *Frontiers in Marine Science*, 8 (2021), 642143 [S. Jiang, J. Jin, Y. Wu, Y. Zhang, Y. Wei, C. Rocha, J.S.P. Ibánhez, J. Zhang]
- 'Does nitrate enrichment accelerate organic matter turnover in subterranean estuaries?', *Frontiers in Marine Science*, 8 (2021), 661201 [J.S.P. Ibánhez, X.A. Álvarez-Salgado, C. Rocha]
- 'Fresh and saline submarine groundwater discharge in a large coastal inlet affected by seasonal upwelling', *Limnology and Oceanography*, 66 (2021), 2141-2158 [J.S.P. Ibánhez, X.A. Álvarez-Salgado, M. Nieto-Cid, C. Rocha]
- 'Denitrification-nitrification process in permeable coastal sediments: an investigation on the effect of salinity and nitrate availability using flow-through reactors', *Acta Oceanol. Sin.* 40 (2021), 1-12 [S. Jiang, M. Kavanagh, J.S.P. Ibánhez, C. Rocha]
- 'On the hidden diversity and niche specialization of the microbial realm of subterranean estuaries', *Environmental Microbiology* (2022), <http://dx.doi.org/10.1111/1462-2920.16160> [E. Calvo-Martin, E. Teira, X.A. Álvarez-Salgado, C. Rocha, S. Jiang, M. Justel-Diez, J.S.P. Ibánhez]
- 'Characterization of seasonal groundwater origin and evolution processes in a geologically heterogeneous catchment using geophysical, isotopic and hydro-chemical techniques (Lough Gur, Ireland)', *Hydrological Processes*, 36 (2022), e14706 [D.W. O'Connell, C. Rocha, E. Daly (...), C. Hickey, L.W. Gill]
- 'The effects of subterranean estuary dynamics on nutrient resource ratio availability to microphytobenthos in a coastal lagoon', *Science of the Total Environment*, 851 (2022), 157522 [C. Rocha, S. Jiang, J.S.P. Ibánhez, Q. Yang, K. Mazi, A.D. Koussis]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

**Rodriguez-Blanco, Juan**, 'Targeted crystallization of rare earth carbonate polymorphs at hydrothermal conditions via mineral replacement reactions', *Global Challenges* (2022), <http://dx.doi.org/10.1002/gch2.202200085> [A.M. Szucs, M. Maddin, D. Brien, P.C. Guyett, J.D. Rodriguez-Blanco]

'The role of nanocerianite (CeO<sub>2</sub>) in the stability of Ce carbonates at low-hydrothermal conditions', *RSC Advances*, 13, 10 (2023), 6919-6935 [A.M. Szucs, M. Maddin, D. Brien, R. Rateau, J.D. Rodriguez-Blanco]

**Tomlinson, Emma**, 'Eruption frequency and magnitude in a geothermally active continental rift: the Bora-Baricha-Tullu Moye volcanic complex, main Ethiopian rift', *Journal of Volcanology and Geothermal Research*, 423 (2022), <http://dx.doi.org/10.1016/j.jvolgeores.2022.107471> [A.Z. Tadesse, K. Fontijn, A.A. Melaku (...), E. Tomlinson *et al.*]

'Community established best practice recommendations for tephra studies - from collection through analysis', *Scientific Data*, 9, 1 (2022), <http://dx.doi.org/10.1038/s41597-022-01515-y> [K.L. Wallace, M.I. Bursik, S. Kuehn (...), E. Tomlinson *et al.*]

'Evidence for a very thick Kaapvaal craton root: implications for equilibrium fossil geotherms in the early continental lithosphere', *Earth and Planetary Science Letters*, 597 (2022), <http://dx.doi.org/10.1016/j.epsl.2022.117796> [B.C. Hoare, E.L. Tomlinson, B.S. Kamber]

'Geochronology and glass geochemistry of major Pleistocene eruptions in the main Ethiopian rift: towards a regional tephrostratigraphy', *Quaternary Science Reviews*, 290 (2022), <http://dx.doi.org/10.1016/j.quascirev.2022.107601> [C.M. Vidal, K. Fontijn, C.S. Lane (...), E.L. Tomlinson *et al.*]

'Uranium-lead geochronology applied to pyrope garnet with very low concentrations of uranium', *Geological Magazine* (2023), <http://dx.doi.org/10.1017/S0016756823000122> [G.J. O'Sullivan, B.C. Hoare, C. Mark, F. Drakou, E.L. Tomlinson]

'Deep, ultra-hot-melting residues as cradles of mantle diamond', *Nature*, 615, 7952 (2023), 450-454 [C. Walsh, B. Kamber, E.L. Tomlinson]

'Corrigendum to: A thermodynamic model for the subsolidus evolution and melting of peridotite', *Journal of Petrology*, 62, 5 (2021), <http://dx.doi.org/10.1093/petrology/egab045> [E.L. Tomlinson, T.J.B. Holland]

**Wyse Jackson, Patrick**, 'George Demetrius Sevastopulo 1941-2021', *Palaeontological Association Newsletter*, 109 (2022), 90-93 [P.N. Wyse Jackson]

'History of micro-computed tomographic three-dimensional imaging in bryozoology', *Annals of Bryozoology 7: aspects of the history of research on bryozoans*, eds P.N. Wyse Jackson, M.E. Spencer Jones, Dublin, International Bryozoology Association (2022), 57-72 [M.M. Key, P.N. Wyse Jackson]

'Stenolaemate bryozoans from the Graham formation, Pennsylvanian (Virgilian) at Lost Creek Lake, Texas, USA', *Palaeontologica Electronica*, 25, 2 (2022), 1-56 [A. Ernst, A. Lene Claussen, B. Seuss, P.N. Wyse Jackson]

'George Demetrius Sevastopulo (1941-2021), stratigrapher and palaeontologist: an appreciation', *PalZ*, 96 (2022), 409-413 [P.N. Wyse Jackson, M. Aretz]

'The Paleocene volcanic rocks of the Giant's Causeway and causeway coast, United Kingdom', *The first 100 IUGS Geological Heritage Sites*, ed A. Hilario, Spain, International Union of Geological Sciences (2022), 30-31, 270-271 [K. Lemon, P.N. Wyse Jackson, M. Cooper, M. Dempster]

'The rough and the smooth: stone use in Dublin 1720-1760', *Enriching architecture: craft and its conservation in Anglo-Irish building production, 1660-1760*, eds C. Casey, M. Hayes, London, UCL Press (2023), 234-261 [P.N. Wyse Jackson, L.M. Caulfield]

'Valentia slate, Co. Kerry, Ireland: heritage stone', *Irish Journal of Earth Sciences*, 40 (2022), 87-104 [P.N. Wyse Jackson, L. Caulfield, A. Forde, I. Conlon, P. Cox]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'An appreciation: Matthew Alastair Parkes (1961-2020)', *Irish Journal of Earth Sciences*, 40(2022), 1-9 [N.T. Monaghan, M.J. Simms, P.N. Wyse Jackson, J. Murray]

*Irish Journal of Earth Sciences*, eds J. Murray, P.N. Wyse Jackson, 40 (2022), 1-136

'The pre-Taghanic (Givetian, middle Devonian) ecosystems of Miloszków (Holy Cross Mts, Poland)', *Annales Societatis Geologorum Poloniae*, 92 (2022), 332-379 [A.T. Halamski, A. Balinski, G. Racki (...), P.N. Wyse Jackson *et al.*]

### ZOOLOGY

**Buckley, Yvonne**, 'Opposing community assembly patterns for dominant and non-dominant plant species in herbaceous ecosystems globally', *Ecology and Evolution*, 11 (2021), 17744-17761 [C.A. Arnillas, B. Borer, E. Seabloom, J. Alberti, R. Virtanen, M. Cadotte]

'The macroecology of plant populations from local to global scales', *New Phytologist* (2022), <http://dx.doi.org/10.1111/nph.17749> [Y.M. Buckley, J. Puy]

'Phenotypic plasticity masks range-wide genetic differentiation for vegetative but not reproductive traits in a short-lived plant', *Ecology Letters*, 24, 11 (2021), 2378-2393 [J. Villellas, J. Ehrlén, E.E. Crone, E. Wandrag, A. Wingler, Y.M. Buckley]

**Donohue, Ian**, 'Reconciling climate action with the need for biodiversity protection, restoration and rehabilitation', *Science of the Total Environment*, 857, 1 (2023), 159316 [C.E. Gorman, A. Torsney, A. Gaughran (...), I. Donohue *et al.*]

'Twin pressures of intensification and abandonment negatively impact grassland biodiversity in the Burren', *Biology and Environment: Proceedings of the Royal Irish Academy*, 122B (2022), 123-136 [C.M. McKeon, A. Finn, M.P. Long, I. Donohue, Y.M. Buckley]

'Evolutionary history of grazing and resources determine herbivore exclusion effects on plant diversity', *Nature Ecology and Evolution*, 6 (2022), 1290-1298 [J.N. Price, J. Sitters, T. Ohlert, P. Tognetti, C.S. Brown, R. Virtanen, G.M. Wardle]

'Linking changes in species composition and biomass in a globally distributed grassland experiment', *Ecology Letters*, 25 (2022), 2699-2712 [E. Ladouceur, S.A. Blowes, J.M. Chase, A.T. Clark, P.A. Wilfahrt, W.S. Harpole]

'A function-based typology of earth's ecosystems', *Nature*, 610 (2022), 513-515 [D. Keith, J. Ferrer-Paris, E. Nicholson, M. Bishop, B. Polidoro, P. Giller, B. Robson]

**Holland, Celia**, 'Toxocara: time to let cati "out of the bag"', *Trends in Parasitology*, 38, 4 (2022), 280-289 [L. Maciag, E.R. Morgan, C. Holland]

'An investigation of *Mycobacterium bovis* and helminth coinfection in the European badger *Meles meles*', *International Journal for Parasitology: Parasites and Wildlife*, 19 (2022), 311-316 [D. Kelly, N. Marples, R. Byrne, U. Fogarty, K. Kenny, H. Cameron, D. Griffin, C.V. Holland]

**Jackson, Andrew**, 'Alternate patterns of temperature variation bring about very different disease outcomes at different mean temperatures', *eLife* (2022), <https://doi.org/10.1101/2021.08.31.458468> [C. Kunze, P. Luijckx, A.L. Jackson, I. Donohue]

'Capture heats up sharks', *Conservation Physiology*, 10, 1 (2022) [A. Lloyd Jackson, L. Harding, A. Gallagher (...), A. Jackson *et al.*]

'Short-term behavioural responses of Atlantic bluefin tuna to catch-and-release fishing', *Conservation Physiology*, 10, 1 (2022), <http://dx.doi.org/10.1093/conphys/coac060> [A. Lloyd Jackson, H.R. Dolton, A.L. Jackson (...), J.D.R. Houghton, N.L. Payne]

**Marples, Nicola**, 'Breeding records of the birds of south-east Sulawesi, Indonesia: a collation of observations encompassing nearly 20 years of research in Wallacea', *Bulletin of the British Ornithologists' Club*, 142, 3 (2022), 278-301 [D.P. O'Connell, D.J. Kelly, P.G. Akbar, J. Monkhouse, S.B.A. Kelly, N.M. Marples, T.E. Martin]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'AVONET: morphological, ecological and geographical data for all birds', *Ecology Letters*, 25, 3 (2022), 581-597 [J.A. Tobias, C. Sheard, A.L. Pigot, A.J.M. Devenish, J. Yang, L. Fabio Silveira, D.J. Kelly, *et al.*]
- 'Badger territoriality maintained despite disturbance of major road construction', *PLoS ONE*, 16, 9 (2021), e0242586 [A. Gaughran, E. Mullen, T. MacWhite, P. Maher, D.J. Kelly, R. Kelly, M. Good, N.M. Marples]
- 'Small islands and large biogeographic barriers have driven contrasting speciation patterns in Indo-Pacific sunbirds (Aves: Nectariniidae)', *Zoological Journal of the Linnean Society* (2022), <http://hdl.handle.net/2262/101492> [F. Ó Marcaigh, D.J. Kelly, D.P. O'Connell (...), N. Lawless, N.M. Marples]
- 'A distinct new species of *Zosterops* white-eye from the Sulawesi region, Indonesia', *Ibis* (2022), <https://doi.org/10.1111/ibi.13148> [M. Irham, D.M. Prawiradilaga, J.K. Menner (...), N.M. Marples, F.E. Rheindt]
- Murphy, Paula**, 'Integrated analysis of Wnt signalling system component gene expression', *Development*, 149, 16 (2022), doi: 10.1242/dev.200312. Epub [P. Murphy, C. Armit, B. Hill, S. Venkataraman, P. Frankel, R. Baldock, D. Davidson]
- 'Mechanical stimulation via muscle activity is necessary for the maturation of tendon multiscale mechanics during embryonic development', *Frontiers in Cell and Developmental Biology* (2021), 10.3389/fcell.2021.725563 [B.E. Peterson, R.A. Rolfe, A. Kunselman, P. Murphy, S. Szczesny]
- O'Connor, Nessa**, 'A Pleistocene legacy structures variation in modern seagrass ecosystems', *Proceedings of the National Academy of Sciences of the United States of America*, 119, 32 (2022), <http://dx.doi.org/10.1073/pnas.2121425119> [J.E. Duffy, J.J. Stachowicz, P.L. Reynolds, K.A. Hovel, M. Jahnke, S.L. Ziegler, J.L. Olsen]
- 'The biogeography of community assembly: latitude and predation drive variation in community trait distribution in a guild of epifaunal crustaceans', *Proceedings of the Royal Society B-Biological Sciences*, 289, 1969 (2022), 20211762 [C.P. Gross, J.E. Duffy, K.A. Hovel, M.R. Kardish, P.L. Reynolds, S.L. Ziegler, J.J. Stachowicz]
- 'Whole system analysis is required to determine the fate of macroalgal carbon: a systematic review', *Journal of Phycology*, 58, 3 (2022), 364-376 [J. Dolliver, N. O'Connor]
- 'Estimating growth, loss and potential carbon sequestration of farmed kelp: a case study of *Saccharina latissima* at Strangford Lough, Northern Ireland', *Applied Phycology*, 3, 1 (2022), 324-339 [J. Dolliver, N.E. O'Connor]
- Piggott, Jeremy**, 'Rapid evolution generates synergism between multiple stressors: linking theory and an evolution experiment', *Global Change Biology* (2021), 1-13 [J.A. Orr, P. Luijckx, J.F. Arnoldi, A.L. Jackson, J.J. Piggott]
- 'Scaling up uncertain predictions to higher levels of organisation tends to underestimate change', *Methods in Ecology and Evolution*, 12, 8 (2021), 1521-1532 [J.A. Orr, J.J. Piggott, A.L. Jackson, J-F. Arnoldi]
- 'Warming and imidacloprid pulses determine macroinvertebrate community dynamics in experimental streams', *Global Change Biology*, 27, 21 (2021), 5469-5490 [S.J. Macaulay, K.J. Hageman, J.J. Piggott, N.P.D. Juvigny Khenafou, C.D. Matthaei]
- 'Response of macroinvertebrates to industrial warm discharges: the river Shannon case study (Ireland)', *Inland Waters*, 11, 3 (2021), 381-395 [A. West, M.R. Penk, R. Larney, J.J. Piggott]
- 'Acute toxicity of the insecticide cypermethrin to three common European mayfly and stonefly nymphs', *Limnologia*, 88 (2021), 125871 [D. Crowley, M.R. Penk, S.J. Macaulay, J.J. Piggott]
- 'Using weighted expert judgement and nonlinear data analysis to improve Bayesian belief network models for riverine ecosystem services', *Science of the Total Environment*, 851, 158065 (2022), <http://dx.doi.org/10.1016/j.scitotenv.2022.158065> [M.R. Penk, M. Bruen, C.K. Feld, J.J. Piggott, M. Christie, C. Bullock, M. Kelly-Quinn]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'Cattle grazing of a celtic sea saltmarsh affects invertebrate community composition and biomass, but not diversity', *Wetlands*, 42, 8 (2022), <http://dx.doi.org/10.1007/s13157-022-01643-6> [K.E. Lynch, M.R. Penk, P.M. Perrin, J.J. Piggott]

'Perceived multiple stressor effects depend on sample size and stressor gradient length', *Water Research*, 226, 119260 (2022), <http://dx.doi.org/10.1016/j.watres.2022.119260> [L. Mack, C.F. de la Hoz, M. Penk (...), J. Piggott *et al.*]

'Assessing remote sensing as a tool to monitor hydrological stress in Irish catchments with freshwater pearl mussel populations', *Science of the Total Environment*, 806, 150807 (2022), <http://dx.doi.org/10.1016/j.scitotenv.2021.150807> [M. Kuemmerlen, E.A. Moorkens, J.J. Piggott]

'Local stressors mask the effects of warming in freshwater ecosystems', *Ecology Letters*, 25, 11 (2022), 2540-2551 [O.F. Morris, C.J.G. Loewen, J.J. Piggott, R.D. Vinebrooke, M.C. Jackson]

**Rolfe, Rebecca**, 'Joint development recovery on resumption of embryonic movement following paralysis', *Disease Models and Mechanisms*, 14, 4 (2021), <https://doi.org/10.1242/dmm.04> [R.A. Rolfe, D. Scanlon-O' Callaghan, P. Murphy]

'Geometric analysis of chondrogenic self-organisation of embryonic limb bud cells in micromass culture', *Cell and Tissue Research* (2022), <http://hdl.handle.net/2262/97615> [R.A. Rolfe, C.A. Shea, P. Murphy]

'Quantifying the tolerance of chick hip joint development to temporary paralysis and the potential for recovery', *Developmental dynamics: an official publication of the American Association of Anatomists*, 250, 3 (2021), 450-464 [D.L. Bridglal, C.J. Boyle, R.A. Rolfe, N.C. Nowlan]

'Mechanical stimulation via muscle activity is necessary for the maturation of tendon multiscale mechanics during embryonic development', *Frontiers in Cell and Developmental Biology* (2021), 10.3389/fcell.2021.725563 [B.E. Peterson, R.A. Rolfe, A. Kunselman, P. Murphy, S. Szczesny]

### TRINITY CENTRE FOR THE ENVIRONMENT

**Collier, Marcus**, 'Anthropogenic induced beta diversity in plant-pollinator networks: dissimilarity, turnover, and predictive power', *Frontiers in Ecology and Evolution*, 10 (2022), 806615 [C. White, M.J. Collier, J.C. Stout]

'Spatial variability of urban forest topsoil properties: towards representative and robust sampling design', *Open Research Europe* (2021), 00-00 [N. Galle, W. Brinton, R. Vos, F. Duarte, M.J. Collier, C. Ratti, F. Pilla]

'Urban transitions towards nature-based solutions', *Urban Forestry and Urban Greening*, 74 (2022), <https://doi.org/10.1016/j.ufug.2022.127663> [I. Zwierchowska, C. Cortinovia, M.J. Collier, A. Mizgajski]

*A practical guide to using reflexive monitoring for nature-based solutions: a connecting nature guidebook*, Brussels, European Commission, DG Research and Innovation (2022), 76 [M. Lodder, K. Allaert, W. Mulders (...), M.J. Collier *et al.*]

*A practical guide to using co-production for nature-based solutions*, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7501980> [C. van der Have, K. Hölscher, M. Lodder (...), M.J. Collier *et al.*]

*Impact assessment: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7503843> [A. Dumitru, D. Tomé Lourido, M.J. Collier, S. Connop, G. Dick, M-L. Rhodes, R. Sermpenzi, C. Young]

*Technical solutions: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7503843> [S. Connop, C. Nash, M.J. Collier]

*Financing and business models: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7503937> [S. McQuaid, I. Fletcher, M.J. Collier]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- Reflexive monitoring: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7503980> [M. Lodder, K. Allaert, K. Hölscher, I. Notermans, N. Frantzeskaki, M.J. Collier]
- Governance: a connecting nature guidebook*, Final, Brussels, European Commission, DG Research and Innovation (2022), <https://doi.org/10.5281/zenodo.7504020> [P. Vandergert, K. Hölscher, S. McQuaid, M.J. Collier]
- Co-production: a connecting nature guidebook*, Final, Brussels, DG Research and Innovation (2022) [K. Hölscher, N. Frantzeskaki, M. Lodder, K. Allaert, I. Notermans, M.J. Collier]
- Coxon, Catherine**, *EcoMetrics - environmental supporting conditions for groundwater-dependent terrestrial ecosystems*, Wexford, Ireland, Environmental Protection Agency (2022), 1-54 [L. Gill, S. Bhatnagar, E. Bijkerk (...), C. Coxon, P. Johnston]
- 'Patterns and drivers of groundwater and stream nitrate concentrations in intensively managed agricultural catchments', *Water*, 14, 9 (2022), 1388 [E. McAleer, C. Coxon, P-E. Mellander, J. Grant, K. Richards]
- 'Flow cytometry and fecal indicator bacteria analyses for fingerprinting microbial pollution in karst aquifer systems', *Water Resources Research*, 58 (2022), e2021WR029840 [L. Vucinic, D. O'Connell, R. Teixeira, C. Coxon, L.W. Gill]
- 'Multiple fluorescence approaches to identify rapid changes in microbial indicators at karst springs', *Journal of Contaminant Hydrology*, 254, 104129 (2023) [L. Vucinic, D. O'Connell, D. Dubber, C. Coxon, L. Gill]
- Crowley, Quentin**, 'Investigating post-depositional alteration of trace elements in fish scales using tagged and recaptured wild salmon', *Fisheries Research*, 248 (2022), <http://dx.doi.org/10.1016/j.fishres.2021.106207> [E. Tray, D. Brophy, N.O. Maoileidigh, R. Finlay, E. de Eyto, R. Poole, Q.G. Crowley]
- 'A study of natural radioactivity levels and radon/thoron release potential of bedrock and soil in southeastern Ireland', *International Journal of Environmental Research and Public Health*, 18, 5 (2021), 1-18 [M.M. Aghdam, Q. Crowley, C. Rocha, V. Dentoni, S.D. Pelo, S. Long, M. Savatier]
- 'A users guide to radon priority areas: examples from Ireland', *Journal of the European Radon Association*, 3 (2022), <http://hdl.handle.net/2262/98442> [M.B. Hughes, J. Elio, Q.G. Crowley]
- 'Detailed geogenic radon potential mapping using geospatial analysis of multiple geo-variables: a case study from a high-risk area in SE Ireland', *International Journal of Environmental Research and Public Health*, 19 (2022), 15910 [M.M. Aghdam, V. Dentoni, S. Da Pelo, Q. Crowley]
- 'Using geogenic radon potential to assess radon priority area designation, a case study around Castleisland, Co. Kerry, Ireland', *Journal of Environmental Radioactivity*, 251 (2022), 106956- [M.H. Banrion, J. Elíó, Q.G. Crowley]
- 'A multi-proxy provenance study of late carboniferous to middle Jurassic sandstones in the eastern Sverdrup basin and its bearing on Arctic palaeogeographic reconstructions', *Geosciences*, 13, 1 (2023), 10 [M.A. Pointon, H. Smyth, J.E. Omma (...), Q.G. Crowley *et al.*]
- 'Wanted dead or alive: skeletal structure alteration of cold-water coral *Desmophyllum pertusum* (*Lophelia pertusa*) from anthropogenic stressors', *Oceans*, 4, 1 (2023), 68-79 [E.T. Krueger, J.V. Büscher, D.A. Hoey, D. Taylor, P.J. O'Reilly, Q.G. Crowley]
- Gray, Nicholas**, *Activated sludge: developments and sustainable solutions*, First, London, World Scientific (2023), 1-607 [N.F. Gray]
- Waldren, Stephen**, *EcoMetrics - environmental supporting conditions for groundwater-dependent terrestrial ecosystems*, Wexford, Ireland, Environmental Protection Agency (2022), 1-54 [L. Gill, S. Bhatnagar, E. Bijkerk (...), S. Waldren *et al.*]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- Piggott, Jeremy**, 'Rapid evolution generates synergism between multiple stressors: linking theory and an evolution experiment', *Global Change Biology* (2021), 1-13 [J.A. Orr, P. Luijckx, J.F. Arnoldi, A.L. Jackson, J.J. Piggott]
- 'Scaling up uncertain predictions to higher levels of organisation tends to underestimate change', *Methods in Ecology and Evolution*, 12, 8 (2021), 1521-1532 [J.A. Orr, J.J. Piggott, A.L. Jackson, J-F. Arnoldi]
- 'Warming and imidacloprid pulses determine macroinvertebrate community dynamics in experimental streams', *Global Change Biology*, 27, 21 (2021), 5469-5490 [S.J. Macaulay, K.J. Hageman, J.J. Piggott, N.P.D. Juvigny Khenafou, C.D. Matthaei]
- 'Response of macroinvertebrates to industrial warm discharges: the river Shannon case study (Ireland)', *Inland Waters*, 11, 3 (2021), 381-395 [A. West, M.R. Penk, R. Larney, J.J. Piggott]
- 'Acute toxicity of the insecticide cypermethrin to three common European mayfly and stonefly nymphs', *Limnologica*, 88 (2021), 125871 [D. Crowley, M.R. Penk, S.J. Macaulay, J.J. Piggott]
- 'Using weighted expert judgement and nonlinear data analysis to improve Bayesian belief network models for riverine ecosystem services', *Science of the Total Environment*, 851, 158065 (2022), <http://dx.doi.org/10.1016/j.scitotenv.2022.158065> [M.R. Penk, M. Bruen, C.K. Feld, J.J. Piggott, M. Christie, C. Bullock, M. Kelly-Quinn]
- 'Cattle grazing of a celtic sea saltmarsh affects invertebrate community composition and biomass, but not diversity', *Wetlands*, 42, 8 (2022), <http://dx.doi.org/10.1007/s13157-022-01643-6> [K.E. Lynch, M.R. Penk, P.M. Perrin, J.J. Piggott]
- 'Perceived multiple stressor effects depend on sample size and stressor gradient length', *Water Research*, 226, 119260 (2022), <http://dx.doi.org/10.1016/j.watres.2022.119260> [L. Mack, C.F. de la Hoz, M. Penk (...), J. Piggott *et al.*]
- 'Assessing remote sensing as a tool to monitor hydrological stress in Irish catchments with freshwater pearl mussel populations', *Science of the Total Environment*, 806, 150807 (2022), <http://dx.doi.org/10.1016/j.scitotenv.2021.150807> [M. Kuemmerlen, E.A. Moorkens, J.J. Piggott]
- 'Local stressors mask the effects of warming in freshwater ecosystems', *Ecology Letters*, 25, 11 (2022), 2540-2551 [O.F. Morris, C.J.G. Loewen, J.J. Piggott, R.D. Vinebrooke, M.C. Jackson]

## School of Physics

- Bradley, Louise**, 'Direct laser writing of vapour-responsive photonic arrays', *Journal of Materials Chemistry C*, 9 (2021), 11674-11678 [C. Delaney, J. Qian, X. Zhang, R. Potyrailo, A.L. Bradley, L. Florea]
- 'Photoluminescence modification using plasmonic nanoparticles coupled to vanadium dioxide', *OSA Optical Design and Fabrication 2021 (Flat Optics, Freeform, IODC, OFT), OSA Optical Fabrication and Testing* (2021) [S. Cunningham, C. Hrelescu, G. Atcheson, P. Stamenov, A.L. Bradley]
- 'Polaritonic critical coupling in a hybrid quasibound states in the continuum cavity-WS2 monolayer system', *Physical Review B*, 105, 16 (2022), <http://dx.doi.org/10.1103/PhysRevB.105.165424> [X. Zhang, A.L. Bradley]
- 'Absorbance enhancement of monolayer MoS<sub>2</sub> in a perfect absorbing system', *Physical Review Materials*, 6, 4 (2022), <http://dx.doi.org/10.1103/PhysRevMaterials.6.045202> [X. Zhang, J. Lawless, J. Li, J.F. Donegan, A.L. Bradley, L. Peters, N. McEvoy]
- 'Quasi-guided modes in titanium dioxide arrays fabricated via soft nanoimprint lithography', *ACS Applied Materials and Interfaces*, 13, 40 (2021), 47860-47870 [J.A. Garcia, C. Hrelescu, X. Zhang, D. Grosso, M. Abbarchi, A.L. Bradley]
- 'Plasmonic nanodiscs on vanadium dioxide thin films for tunable luminescence enhancement', *Optics Express*, 29, 14 (2021), 22288-22298 [S. Cunningham, C. Hrelescu, A.L. Bradley]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Wide-angle invisible dielectric metasurface driven by transverse Kerker scattering', *Physical Review B*, 103, 19 (2021), <http://dx.doi.org/10.1103/PhysRevB.103.195419> [X. Zhang, A.L. Bradley]
- 'Transfer matrix method for kerker-type scattering of metasurface', *CLEO: Applications and Technology 2021*, San Jose, California United States, OSA (2021) [X. Zhang, J. Li, J.F. Donegan, A.L. Bradley.]
- 'Tunable plasmonics with Au nanoparticles coupled to thin film vanadium dioxide', *Optical Materials Express*, 12, 9 (2022), 3638-3647 [S. Cunningham, A.L. Bradley]
- 'Electrically driven reprogrammable vanadium dioxide metasurface using binary control for broadband beam steering', *ACS Applied Materials and Interfaces*, 14, 36 (2022), 41186-41195 [M. Proffit, S. Pelivani, P. Landais, A.L. Bradley]
- 'Large reversible plasmon shift with au nanodisc dimers on thin film VO<sub>2</sub>', *ACS Applied Materials and Interfaces* (2022) [S. Cunningham, A.L. Bradley]
- 'Direct laser writing of submicron photonic arrays for vapor-responsive sensing', *Optica advanced materials Congress*, Maastricht, Limburg Netherlands (2022) [J. Qian, C. Delaney, X. Zhang, L. Florea, A.L. Bradley]
- 'Large reversible plasmon shift with au nanodisc dimers on thin film VO<sub>2</sub>', *Optica advanced photonics congress 2022*, Netherlands (2022), <http://dx.doi.org/10.1364/NOMA.2022.NoTh2E.1> [S. Cunningham, A.L. Bradley]
- 'High-figure-of-merit biosensing and enhanced excitonic absorption in an MoS<sub>2</sub>-integrated dielectric metasurface', *Micromachines*, 14, 2 (2023), <http://dx.doi.org/10.3390/mi14020370> [H. Hajian, I.D. Rukhlenko, A.L. Bradley, E. Ozbay]
- Coey, J.M.D., 'Stability of Mn<sub>2</sub>Ru<sub>x</sub>Ga-based multilayer stacks', *Thin Solid Films*, 745, 139104 (2022), <http://hdl.handle.net/2262/98369> [G. Atcheson, K. Siewierska, J.M.D Coey, K. Rode, P. Stamenov]
- 'Deformation and necking of liquid droplets in a magnetic field', *Physics of Fluids* (2022) [S. Poulouse, J.A. Quirke, P. Stamenov, M.E. Möbius, J.M.D. Coey]
- 'Evaporation of water and urea solution in a magnetic field; the role of nuclear isomers', *Journal of Colloid and Interface Science*, 629 (2023), 814-824 [S. Poulouse, M. Venkatesan, M. Möbius, J.M.D. Coey]
- 'Single-pulse all-optical switching in amorphous DyxCo<sub>1-x</sub> and Tb<sub>x</sub>Co<sub>1-x</sub>', *Applied Physics Letters*, 120 (2022), 112401-1-112401-6 [Z. Hu, J. Besbas, R. Smith, N. Teichert, G. Atcheson, K. Rode, P. Stamenov, J.M.D. Coey]
- 'Stability of Mn<sub>2</sub>Ru<sub>x</sub>Ga-based multilayer stacks', *Thin Solid Films*, 745 (2022), 139104-1-139104-6 [G. Atcheson, K. Siewierska, J.M.D. Coey, K. Rode, P. Stamenov]
- 'Bonded Sm-Fe-N permanent magnets', *Modern permanent magnets*, eds J.B. Croat, J. Ormerod, Amsterdam, Elsevier Amsterdam (2022), Chapter 9 [J.M.D Coey]
- 'Metallic nitride and carbide perovskites - history and prospects', *Journal of Solid State Science and Technology*, 11 (2022), 055002-1-055002-11 [J.M.D. Coey, D. Givord, D. Fruchart. J.B. Goodenough]
- 'Noncollinear ferrimagnetism and anomalous Hall effects in Mn<sub>4</sub>N thin films', *Physical Review B*, 106 (2022), L060409 [Y. He, S. Lenne, Z. Gercsi, G. Atcheson, J. O'Brien, D. Fruchart, K. Rode, J.M.D. Coey]
- 'Magnetic forces in paramagnetic fluids', *Journal of Physics Condensed Matter*, 35, 5 (2022), 053002 [T. Butcher, J.M.D. Coey]
- 'Electrical detection of magnetic skyrmions in a magnetic tunnel junction', *Advanced Electronic Materials*, 9 (2022), 2200570 [Y. Guang, L. Zhang, J. Zhang (...), J.M.D. Coey et al.]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Au<sub>4</sub>Mn: a localized ferromagnet with strong spin-orbit coupling, long-range ferromagnetic exchange, and high Curie temperature', *Physical Review B*, 106 (2022), 1-8 [Y. He, Z. Gercsi, R. Zhang (...), P. Stamenov, J.M.D. Coey]
- Coleman, Jonathan**, 'Highly conductive networks of silver nanosheets', *Small* (2022), <http://hdl.handle.net/2262/98370> [A.G. Kelly, J. O'Reilly, C. Gabbett (...), P. Stamenov, J.N. Coleman]
- 'Quantifying the effect of separator thickness on rate performance in lithium-ion batteries', *Journal of the Electrochemical Society*, 169, 3 (2022), <http://hdl.handle.net/2262/98389> [D.V. Horvath, R. Tian, C. Gabbett, V. Nicolosi, J.N. Coleman]
- 'Liquid-phase exfoliation of nonlayered non-van-der-Waals crystals into nanoplatelets', *Advanced Materials*, 10, 2 (2023), 024003 [H. Kaur, J. Coleman]
- 'Liquid processing of interfacially grown iron-oxide flowers into 2D-platelets yields lithium-ion battery anodes with capacities of twice the theoretical value', *Small* (2022), <http://hdl.handle.net/2262/101346> [B. Konkana, H. Kaur, R. Tian (...), M.D. Scanlon, J.N. Coleman]
- 'Collagen/pristine graphene as an electroconductive interface material for neuronal medical device applications', *Applied Materials Today*, 29, 101629 (2022), <http://dx.doi.org/10.1016/j.apmt.2022.101629> [J. Maughan, P.J. Gouveia, J.G. Gonzalez (...), J.N. Coleman, F.J. O'Brien]
- 'Amorphous 2D-nanoplatelets of red phosphorus obtained by liquid-phase exfoliation yield high areal capacity Na-ion battery anodes', *Advanced Energy Materials*, 13, 6 (2023), <http://dx.doi.org/10.1002/aenm.202203013> [H. Kaur, B. Konkana, C. Gabbett (...), V. Nicolosi, J.N. Coleman]
- 'High-mobility flexible transistors with low-temperature solution-processed tungsten dichalcogenides', *ACS Nano*, 17, 3 (2023), 2912-2922 [T. Carey, O. Cassidy, K. Synnatschke (...), D. O'Suilleabhain, J.N. Coleman]
- 'Solution processed, vertically stacked hetero-structured diodes based on liquid-exfoliated WS<sub>2</sub> nanosheets: from electrode-limited to bulk-limited behavior', *Nanoscale*, 14, 42 (2022), 15679-15690 [S. Liu, E.-X. Ding, A.G. Kelly (...), J. Garcia, J.N. Coleman]
- 'Highly conductive and long-term stable films from liquid-phase exfoliated platinum diselenide', *Journal of Materials Chemistry C*, 11, 2 (2022), 593-599 [K. Lee, B.M. Szydłowska, O. Hartwig (...), J.N. Coleman *et al.*]
- Cross, Graham**, 'Densification of a polymer glass under high-pressure shear flow', *Physical Review B*, 106, 6 (2022), <http://dx.doi.org/10.1103/PhysRevB.106.L060103> [O. Brazil, J.B. Pethica, G.L.W. Cross]
- 'The effect of contact aspect ratio and film to substrate elastic modulus ratio on stress vs. strain up to the point of yield during flat punch thin film indentation of an elastic-plastic film', *Frontiers in Materials*, 9, 906204 (2022), <http://dx.doi.org/10.3389/fmats.2022.906204> [A.D. Sinnott, O. Brazil, G.L.W. Cross]
- 'High-resolution micro-cavity filling sensing by fiber optic interferometry', *Review of Scientific Instruments*, 94, 1 (2023), <http://dx.doi.org/10.1063/5.0109751> [M.F. Jadidi, Z. Gholamvand, G.L.W. Cross]
- Donegan, John**, 'Absorbance enhancement of monolayer MoS<sub>2</sub> in a perfect absorbing system', *Physical Review Materials*, 6, 4 (2022), <http://dx.doi.org/10.1103/PhysRevMaterials.6.045202> [X. Zhang, J. Lawless, J. Li, J.F. Donegan, A.L. Bradley, L. Peters, N. McEvoy]
- 'Wide-waveguide high-power low-RIN single-mode distributed feedback laser diodes for optical communication', *Optics Express*, 30, 17 (2022), 30187-30197 [M. Xiang, Y. Zhang, G. Li, C. Liu, Q. Chen, Q. Lu, L. Huang, M. Lu, J. Donegan, W. Guo]
- 'Effect of thermal tuning and mode coupling on soliton microcombs in AlN microresonators', *IEEE Journal of Selected Topics in Quantum Electronics* (2022), <http://dx.doi.org/10.1109/JSTQE.2022.3196124> [A.A. Afridi, H. Weng, J. Li, R. McKenna, M. McDermott, H. Tu, Q. Lu, W. Guo, J.F. Donegan]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Dual-mode microresonators as straightforward access to octave-spanning dissipative Kerr solitons', *APL Photonics*, 7, 6 (2022), <http://dx.doi.org/10.1063/5.0089036> [H. Weng, A.A. Afridi, J. Li, M. McDermott, H. Tu, L.P. Barry, Q. Lu, W. Guo, J.F. Donegan]
- 'Erratum: Dual-mode microresonators as straightforward access to octave-spanning dissipative Kerr solitons (APL Photonics (2022) 7 (066103) DOI: 10.1063/5.0089036)', *APL Photonics*, 7, 7 (2022), <http://dx.doi.org/10.1063/5.0103070> [H. Weng, A.A. Afridi, J. Li, M. McDermott, H. Tu, L.P. Barry, Q. Lu, W. Guo, J.F. Donegan]
- 'Multi-channel wide range athermal operation of slotted surface grating lasers for athermal DWDM', *OSA Continuum*, 1, 2 (2022), 345-354 [D. Mickus, R. McKenna, C. Murphy, J. Donegan]
- 'Breather solitons in AIN microresonators', *OSA Continuum*, 1, 1 (2022), 42-50 [A.A. Afridi, H. Weng, J. Li, J. Liu, M. McDermott, Q. Lu, W. Guo, J.F. Donegan]
- 'Method to measure thermal impedance for all-active lasers using the athermalisation condition', *Optics Continuum*, 1, 3 (2022), 556 [D. Mickus, C. Murphy, R. McKenna, J.F. Donegan]
- 'Elliptical plasmonic near-field transducer and v-shape waveguide designs for heat assisted magnetic recording', *Optics Continuum*, 1, 7 (2022), 1529 [M. Ali, F. Bello, N. Abadía, J. Nicolás, F. Huang, J. Donegan]
- 'Octave-spanning soliton optical frequency comb based on AIN microring resonator (invited) AIN(-)', *Hongwai yu Jiguang Gongcheng/Infrared and Laser Engineering*, 51, 5 (2022), <http://dx.doi.org/10.3788/IRLA20220311> [H. Tu, J. Liu, H. Weng, Y. Zhang, J. Dai, Q. Lu, J.F. Donegan, W. Guo]
- 'Nanoheating and seebeck effects in ultrathin films', *Advanced Optical Materials*, 10, 23 (2022), <http://dx.doi.org/10.1002/adom.202201358> [F.D. Bello, D.D.A. Clarke, I. Tarasenko, J.F. Donegan, O. Hess]
- Espey, Brian**, 'Empirical modelling of public lighting emission functions', *Remote Sensing*, 13, 19 (2021), <http://dx.doi.org/10.3390/rs13193827> [B.R. Espey]
- 'Association of perceptions of artificial light-at-night, light-emitting device usage and environmental noise', *Heliyon*, 8, 11 (2022), 11 [M. Cleary-Gaffney, B. Espey, A. Coogan]
- 'Association of perceptions of artificial light-at-night, light-emitting device usage and environmental noise appraisal with psychological distress, sleep quality and chronotype: a cross sectional study', *Heliyon*, 8, 11 (2022), <http://dx.doi.org/10.1016/j.heliyon.2022.e11284> [M. Cleary-Gaffney, B. Espey, A.N. Coogan]
- 'Multiple angle observations would benefit visible band remote sensing using night lights', *Journal of Geophysical Research: Atmospheres*, 127, 12 (2022), <http://dx.doi.org/10.1029/2021JD036382> [C.C.M. Kyba, M. Aube, S. Bara, A. Bertolo, C.A. Bouroussis, Z. Wang, J. Zhang]
- Ferreira, Mauro**, 'A direct approach to calculate the temperature dependence of the electronic relaxation time in 2D semiconductors from Boltzmann transport theory', *Journal of Applied Physics*, 131 (2022), 115704 [R.M. Tromer, L.F.C. Pereira, M.S. Ferreira, M.G.E. Luz]
- 'Acoustic full waveform inversion with Hamiltonian Monte Carlo method', *Physica A: Statistical Mechanics and its Applications*, 617 (2023), 128618 [P.D.S. Lima, G. Corso, M.S. Ferreira, J.A. Medeiros]
- Gibson, Neale**, 'High-resolution atmospheric retrievals of WASP-121b transmission spectroscopy with ESPRESSO: consistent relative abundance constraints across multiple epochs and instruments', *Monthly Notices of the Royal Astronomical Society* (2022), <http://dx.doi.org/10.1093/mnras/stac3388> [C. Maguire, N.P. Gibson, S.K. Nugroho, S. Ramkumar, M. Fortune, S.R. Merritt, E. de Mooij]
- 'Solar-to-supersolar sodium and oxygen absolute abundances for a 'hot Saturn' orbiting a metal-rich star', *Monthly Notices of the Royal Astronomical Society*, 515, 2 (2022), 3037-3058 [N.K. Nikolov, D.K. Sing, J.J. Spake (...), N.P. Gibson, N.J. Mayne]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Constraints on TESS albedos for five hot Jupiters', *Monthly Notices of the Royal Astronomical Society*, 513, 3 (2022), 3444-3457 [M. Blazek, P. Kabath, A.A.A. Piette (...), N.P. Gibson *et al.*]
- 'Dayside Fe i emission, day-night brightness contrast and phase offset of the exoplanet WASP-33b', *Astronomical Journal*, 163, 6 (2022), <http://dx.doi.org/10.3847/1538-3881/ac5f4d> [M.K. Herman, E.J.W. De Mooij, S.K. Nugroho, N.P. Gibson, R. Jayawardhana]
- Gould, John**, 'Dephasing-enhanced performance in quasiperiodic thermal machines', *Physical Review B*, 105, 13 (2022), <http://dx.doi.org/10.1103/PhysRevB.105.134203> [C. Chiaracane, A. Purkayastha, M.T. Mitchison, J. Gould]
- 'Taking the temperature of a pure quantum state', *Physical Review A*, 105, 3 (2022), <http://dx.doi.org/10.1103/PhysRevA.105.L030201> [M.T. Mitchison, A. Purkayastha, M. Brenes, A. Silva, J. Goold]
- 'Extractable work in quantum electromechanics', *Physical Review E*, 106, 3 (2022), <http://dx.doi.org/10.1103/PhysRevE.106.L032104> [O. Culhane, M.T. Mitchison, J. Goold]
- 'Time periodicity from randomness in quantum systems', *Physical Review A*, 106, 2 (2022), <http://dx.doi.org/10.1103/PhysRevA.106.022209> [G. Guarneri, M.T. Mitchison, A. Purkayastha, D. Jaksch, B. Buča, J. Goold]
- 'Extensive multipartite entanglement from Su(2) quantum many-body scars', *Physical Review Letters*, 129, 2 (2022), <http://dx.doi.org/10.1103/PhysRevLett.129.020601> [J-Y. Desaulés, F. Pietracaprina, Z. Papić, J. Goold, S. Pappalardi]
- 'Periodically refreshed quantum thermal machines', *Quantum*, 6 (2022), <http://dx.doi.org/10.22331/Q-2022-09-08-801> [A. Purkayastha, G. Guarneri, S. Campbell, J. Prior, J. Goold]
- 'Entanglement enhanced metrology with quantum many-body scars', *Physical Review B*, 107, 3 (2023), <http://dx.doi.org/10.1103/PhysRevB.107.035123> [S. Dooley, S. Pappalardi, J. Goold]
- Hegner, Martin**, 'Multimodal real-time frequency tracking of cantilever arrays in liquid environment for biodetection: comprehensive setup and performance analysis', *Review of Scientific Instruments*, 92 (2021), 065001 [A. De Pastina, F. Padovani, G. Brunetti, C. Rotella, F. Niosi, V. Usov, M. Hegner]
- Hutzler, Stefan**, 'Physics in a small bedroom', *Imagine Math 8*, eds M.Emmer, M. Abate, Springer (2022) [D. Weaire, S. Hutzler, A. Irannezhad, K. Cox]
- 'Buckling of a tilted line of confined hard spheres', *Philosophical Magazine*, 102 (2022), 2506-2524 [A. Irannezhad, D. Weaire, A. Mughal, J. Ryan-Purcell, S. Hutzler]
- 'Equilibrium states of confined ions in two dimensions', *Philosophical Magazine*, 103 (2023), 595-609 [A. Mughal, S. Hutzler, D. Weaire]
- Jones, Lewys**, 'Improving the noise floor and speed of your detector: a modular hardware approach for under \$1000', *Microscopy and Microanalysis*, 28, S1 (2022), 2904-2906 [J.J.P. Peters, T. Mullarkey, L. Jones]
- 'Multiphysics simulation for TEM objective lens evaluation and design', *Microscopy and Microanalysis*, 28, S1 (2022), 2494-2495 [P. McBean, Z. Milne, A. Kanthawar, K. Hattar, K. Jungjohann, L. Jones]
- 'Fast solid-state segmented detectors: improvements and implications for DPC-STEM', *Microscopy and Microanalysis*, 28, S1 (2022), 2486-2487 [T. Mullarkey, J.J.P. Peters, G. Moldovan, J. Garell, L. Jones]
- 'Retrofitting a photoelectron source: improving resolution and functionality', *Microscopy and Microanalysis*, 28, S1 (2022), 2934-2935 [F. Quigley, C. Downing, C. McGuinness, L. Jones, Lewys]
- 'The user adjustable pole-piece: expanding TEM functionality without compromise', *Microscopy and Microanalysis*, 28, S1 (2022), 2636-2638 [P. McBean, P. Murphy, R. Sagawa, L. Jones]



## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'How low can you go: pushing the limits of dose and frame-time in the STEM', *Microscopy and Microanalysis*, 28, S1 (2022), 2218-2220 [T. Mullarkey, J.J.P. Peters, M. Geever, L. Jones]
- 'Benchmarking the performance of a new photoelectron source', *Microscopy and Microanalysis*, 28, S1 (2022), 2914-2916 [F. Quigley, C. Downing, C. McGuinness, L. Jones]
- 'Templated synthesis of SiO<sub>2</sub> nanotubes for lithium-ion battery applications: an *in situ* (scanning) transmission electron microscopy study', *ACS Omega* (2022), <http://dx.doi.org/10.1021/acsomega.2c06298> [O. Ronan, A. Roy, S. Ryan, L. Hughes, C. Downing, L. Jones, V. Nicolosi]
- Lunghi, Alessandro**, 'Engineering chemisorption of Fe<sub>4</sub> single-molecule magnets on gold', *Advanced Materials Interfaces*, 8, 24 (2021), 2101182 [L. Poggini, E. Tancini, C. Danieli (...), A. Lunghi *et al.*]
- 'Temperature dependence of spin-phonon coupling in [VO(acac)<sub>2</sub>]: a computational and spectroscopic study', *The Journal of Physical Chemistry C*, 125, 40 (2021), 22100-22110 [A. Albino, S. Benci, M. Atzori (...), A. Lunghi *et al.*]
- 'Predicting tensorial molecular properties with equivariant machine learning models', *Physical Review B*, 105, 16 (2022), <http://hdl.handle.net/2262/98479> [V.H.A. Nguyen, A. Lunghi, Alessandro]
- 'Toward exact predictions of spin-phonon relaxation times: an ab initio implementation of open quantum systems theory', *Science Advances*, 8, 31 (2022), <http://hdl.handle.net/2262/101055> [A. Lunghi]
- 'Computational design of magnetic molecules and their environment using quantum chemistry, machine learning and multiscale simulations', *Nature Reviews Chemistry* (2022), <http://dx.doi.org/10.1038/s41570-022-00424-3> [A. Lunghi, S. Sanvito]
- 'Unraveling the contributions to spin-lattice relaxation in Kramers single-molecule magnets', *Journal of the American Chemical Society*, 144, 50 (2022), 22965-22975 [S. Mondal, A. Lunghi]
- Lunney, James**, 'Effect of laser repetition rate on the growth of Sc<sub>2</sub>O<sub>3</sub> via pulsed laser deposition', *Applied Physics A: Materials Science and Processing*, 128, 7 (2022), <http://dx.doi.org/10.1007/s00339-022-05698-4> [G.A. Govindassamy, J.J. Prentice, J.G. Lunney, R.W. Eason, J.I. Mackenzie]
- Maguire, Kate**, 'Oxygen and calcium nebular emission line relationships in core-collapse supernovae and Ca-rich transients', *Monthly Notices of the Royal Astronomical Society*, 514, 4 (2022), 5686-5705 [S.J. Prentice, K. Maguire, L. Siebenaler, A. Jerkstrand]
- 'A uniform type Ia supernova distance ladder with the Zwicky Transient Facility: absolute calibration based on the tip of the red giant branch method', *Astrophysical Journal*, 934, 2 (2022), <http://dx.doi.org/10.3847/1538-4357/ac7ceb> [S. Dhawan, A. Goobar, J. Johansson, I.S. Jang, M. Rigault, R. Riddle, B. Rusholme]
- 'SN 2016dsg: a thermonuclear explosion involving a thick helium shell', *Astrophysical Journal*, 934, 2 (2022), <http://dx.doi.org/10.3847/1538-4357/ac75eb> [Y. Dong, S. Valenti, A. Polin, A. Boyle, A. Flors, S. Wyatt, D.R. Young]
- 'Probing for the host galaxies of the fast x-ray transients XRT 000519 and XRT 110103', *Monthly Notices of the Royal Astronomical Society*, 514, 1 (2022), 302-312 [D. Eappache, P.G. Jonker, M. Fraser, M.A.P. Torres, V.S. Dhillon, F. Onori, A. Inkenhaag, S.J. Brennan]
- 'Progenitor, environment, and modelling of the interacting transient AT 2016jbu (Gaia16cfr)', *Monthly Notices of the Royal Astronomical Society*, 513, 4 (2022), 5666-5685 [S.J. Brennan, M. Fraser, J. Johansson, A. Pastorello, R. Kotak, M. Van Leeuwen, B. Van Soelen]
- 'Photometric and spectroscopic evolution of the interacting transient at 2016jbu(Gaia16cfr)', *Monthly Notices of the Royal Astronomical Society*, 513, 4 (2022), 5642-5665 [S.J. Brennan, M. Fraser, J. Johansson, A. Pastorello, R. Kotak, M. Van Leeuwen, B. Van Soelen]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'The detection efficiency of type Ia supernovae from the Zwicky transient facility: limits on the intrinsic rate of early flux excesses', *Monthly Notices of the Royal Astronomical Society*, 513, 2 (2022), 3035-3049 [M.R. Magee, C. Cuddy, K. Maguire (...), F. Feinstein, R. Riddle]
- 'Constraining type Ia supernova explosions and early flux excesses with the Zwicky transient factory', *Monthly Notices of the Royal Astronomical Society*, 512, 1 (2022), 1317-1340 [M. Deckers, K. Maguire, M.R. Magee, G. Dimitriadis, M. Smith, M. Kasliwal, R. Walters]
- 'Target-of-opportunity observations of gravitational-wave events with Vera C. Rubin Observatory', *Astrophysical Journal, Supplement Series*, 260, 1 (2022), <http://dx.doi.org/10.3847/1538-4365/ac617c> [I. Andreoni, R. Margutti, O.S. Salafia, B. Parazin, V.A. Villar, M.W. Coughlin, D. Steeghs, N. Tanvir]
- 'An analysis of the spectroscopic signatures of layering in the ejecta of type Ia supernovae', *Monthly Notices of the Royal Astronomical Society*, 509, 3 (2022), 3580-3598 [M.R. Magee, J.H. Gillanders, K. Maguire, S.A. Sim, F.P. Callan]
- 'Transitional events in the spectrophotometric regime between stripped envelope and superluminous supernovae', *Monthly Notices of the Royal Astronomical Society*, 508, 3 (2021), 4342-4358 [S.J. Prentice, C. Inserra, S. Schulze, M. Nicholl, P.A. Mazzali, J.H. Terwel, D.R. Young]
- 'Probing the progenitors of type Ia supernovae using circumstellar material interaction signatures', *Monthly Notices of the Royal Astronomical Society*, 507, 3 (2021), 4367-4388 [P. Clark, K. Maguire, M. Bulla, L. Galbany, M. Sullivan, J.P. Anderson, S.J. Smart]
- 'Faintest of them all: ZTF 21aaryiz/SN 2021fcg-discovery of an extremely low luminosity type Ia supernova', *Astrophysical Journal Letters*, 921, 1 (2021), <http://dx.doi.org/10.3847/2041-8213/ac2e90> [V.R. Karambelkar, M.M. Kasliwal, K. Maguire, S.G. Anand, I. Andreoni, R. Walters, Y. Yao]
- 'Intermediate-luminosity red transients: spectrophotometric properties and connection to electron-capture supernova explosions', *Astronomy and Astrophysics*, 654 (2021), <http://dx.doi.org/10.1051/0004-6361/202141078> [Y.-Z. Cai, A. Pastorello, M. Fraser, M.T. Botticella, N. Elias-Rosa, B. Wang, D.R. Young]
- 'Luminous type II short-plateau supernovae 2006y, 2006ai, and 2016egz: a transitional class from stripped massive red supergiants', *Astrophysical Journal*, 913, 1 (2021), <http://dx.doi.org/10.3847/1538-4357/abf6d6> [D. Hiramatsu, D.A. Howell, T.J. Moriya, J.A. Goldberg, G. Hosseinzadeh, T.E. Muller-Bravo, D.R. Young]
- 'Core-collapse supernova subtypes in luminous infrared galaxies', *Astronomy and Astrophysics*, 649 (2021), <http://dx.doi.org/10.1051/0004-6361/202039240> [E. Kankare, A. Efstathiou, R. Kotak, E.C. Kool, T. Kangas, A. Reguitti, D.R. Young]
- 'Close, bright, and boxy: the superluminous SN 2018hti', *Monthly Notices of the Royal Astronomical Society*, 512, 3 (2022), 4484-4502 [A. Fiore, S. Benetti, M. Nicholl (...), K. Maguire *et al.*]
- 'The Palomar transient factory core-collapse supernova host-galaxy sample. I. host-galaxy distribution functions and environment dependence of core-collapse supernovae', *Astrophysical Journal, Supplement Series*, 255, 2 (2021), <http://dx.doi.org/10.3847/1538-4365/abff5e> [S. Schulze, O. Yaron, J. Sollerman, G. Leloudas, A. Gal, S. Van Velzen, K.K. Verbeek]
- Matra, Luca**, 'LMT/AzTEC observations of Vega', *Monthly Notices of the Royal Astronomical Society*, 514, 3 (2022), 3815-3820 [J.P. Marshall, M. Chavez-Dagostino, D. Sanchez-Arguelles (...), L. Matrà *et al.*]
- 'ALMA's view of the M-dwarf GSC 07396-00759's edge-on debris disc: AU Mic's coeval twin', *Monthly Notices of the Royal Astronomical Society*, 512, 4 (2022), 4752-4764 [P.F. Cronin-Coltsmann, G.M. Kennedy, C. Adam (...), L. Matrà *et al.*]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Rave: a non-parametric method for recovering the surface brightness and height profiles of edge-on debris discs', *Monthly Notices of the Royal Astronomical Society*, 511, 4 (2022), 4921-4936 [Y. Han, M.C. Wyatt, L. Matrà]
- 'Vertical evolution of exocometary gas-I. How vertical diffusion shortens the CO lifetime', *Monthly Notices of the Royal Astronomical Society*, 515, 1 (2022), 507-524 [S. Marino, G. Cataldi, M.R. Jankovic, L. Matra, M.C. Wyatt]
- 'An ALMA 1.3 millimeter search for debris disks around solar-type stars in the pleiades', *Astronomical Journal*, 164, 3 (2022), <http://dx.doi.org/10.3847/1538-3881/ac80c5> [D. Sullivan, D.J. Wilner, L. Matra, M.C. Wyatt, S.M. Andrews, M.A. Macgregor, B. Matthews]
- Moebius, Matthias**, 'Real-world natural passivation phenomena can limit microplastic generation in water', *Chemical Engineering Journal*, 425 (2022), <http://hdl.handle.net/2262/98026> [Y. Shi, D. Li, L. Xiao (...), M.E. Möbius *et al.*]
- 'Lanthanide luminescence from supramolecular hydrogels consisting of bio-conjugated picolinic-acid-based guanosine quadruplexes', *Chem*, 8, 5 (2022), 1395-1414 [O. Kotova, C. O'Reilly, S.T. Barwich (...), M.E. Möbius, T. Gunnlaugsson]
- 'Evaporation of water and urea solution in a magnetic field; the role of nuclear isomers', *Journal of Colloid and Interface Science*, 629 (2023), 814-824 [S. Poulouse, M. Venkatesan, M. Möbius, J.M.D. Coey]
- 'Additive manufacturing of Ti<sub>3</sub>C<sub>2</sub>-MXene-functionalized conductive polymer hydrogels for electromagnetic-interference shielding', *Advanced Materials*, 34, 5 (2022), <http://dx.doi.org/10.1002/adma.202106253> [J. Liu, L. McKeon, J. Garcia (...), M. Möbius *et al.*]
- 'Deformation and necking of liquid droplets in a magnetic field', *Physics of Fluids* (2022) [S. Poulouse, J.A. Quirke, P. Stamenov, M.E. Möbius, J.M.D. Coey]
- 'The elastic response of graphene oxide gels as a crumpling phenomenon', *Soft Matter* (2022), <http://dx.doi.org/10.1039/D2SM00918H> [S. Barwich, M.E. Möbius]
- '4D printing of MXene hydrogels for high-efficiency pseudocapacitive energy storage', *Nature Communications*, 13, 1 (2022), <http://dx.doi.org/10.1038/s41467-022-34583-0> [K. Li, J. Zhao, A. Zhussupbekova (...), M. Mobius *et al.*]
- Murray, Sophie**, 'The flare likelihood and region eruption forecasting (FLARECAST) project: flare forecasting in the big data and machine learning era', *Journal of Space Weather and Space Climate*, 11, 39 (2021), <http://dx.doi.org/10.1051/swsc/2021023> [M.K. Georgoulis, D.S. Bloomfield, M. Piana, A.M. Massone, M. Soldati, D. Vischi, M. Worsfold]
- 'Solar flare effects on the earth's lower ionosphere', *Solar Physics*, 296, 11 (2021), <http://dx.doi.org/10.1007/s11207-021-01898-y> [L.A. Hayes, O.S.D. O'Hara, S.A. Murray, P.T. Gallagher]
- O'Regan, David**, 'Adhesion of thin metallic layers on Au surfaces', *Journal of Physics Condensed Matter*, 34, 27 (2022), <http://dx.doi.org/10.1088/1361-648X/ac6852> [L.A. Zotti, D.D. O'Regan]
- 'Dynamical screening of local spin moments at metal-molecule interfaces', *ACS Nano*, 17, 6 (2023), 5974-5983 [S. Bhandary, E. Poli, G. Teobaldi, D.D. O'Regan]
- 'Use of DFT + U + J with linear response parameters to predict non-magnetic oxide band gaps with hybrid-functional accuracy', *Physical Review Research*, 5, 1 (2023), <http://dx.doi.org/10.1103/PhysRevResearch.5.013160> [D.S. Lambert, D.D. O'Regan]
- 'DFT + U-type functional derived to explicitly address the flat plane', *Physical Review B*, 107 (2023), L121115 [A.C. Burgess, E. Linscott, D.D. O'Regan]
- Patterson, Charles**, 'TDDFT versus GW/BSE methods for prediction of light absorption and emission in a TADF emitter', *Journal of Physical Chemistry A*, 126, 51 (2022), 9627-9643 [D. Chaudhuri, C.H. Patterson]
- 'Many-body theory of positron binding to polyatomic molecules', *Nature*, 606, 7915 (2022), 688-693 [J. Hofierka, B. Cunningham, C.M. Rawlins, C.H. Patterson, D.G. Green]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- 'Charge transfer excitons in  $\pi$ -stacked thiophene oligomers and P3[Alkyl]T crystals: CIS calculations and electroabsorption spectroscopy', *Journal of Chemical Physics*, 157, 7 (2022), <http://dx.doi.org/10.1063/5.0098575> [S.R. Sahoo, C.H. Patterson]
- Pethica, John, 'Extrinsic plastic hardening of polymer thin films in flat punch indentation', *Philosophical Magazine*, 101, 11 (2021), 1327-1342 [O. Brazil, J.P. de Silva, J.B. Pethica, G.L.W. Cross]
- 'Densification of a polymer glass under high-pressure shear flow', *Physical Review B*, 106, 6 (2022), <http://dx.doi.org/10.1103/PhysRevB.106.L060103> [O. Brazil, J.B. Pethica, G.L.W. Cross]
- Sanvito, Stefano, 'Robust covalent pyrazine anchors forming highly conductive and polarity-tunable molecular junctions with carbon electrodes', *Physical Chemistry Chemical Physics*, 24, 35 (2022), 21337-21347 [Y. Wang, H. Pan, D. Lin, S. Li, Y. Wang, S. Sanvito, S. Hou]
- 'Density functional study on the deprotonation and binding mechanism of imidazole on gold electrodes in an aqueous environment', *Journal of Physical Chemistry C*, 126, 30 (2022), 12424-12434 [Y. Jiang, Y. Wang, S. Sanvito, S. Hou]
- 'Data-driven time propagation of quantum systems with neural networks', *Physical Review B*, 106, 4 (2022), <http://dx.doi.org/10.1103/PhysRevB.106.045402> [J. Nelson, L. Coopmans, G. Kells, S. Sanvito]
- 'Local inversion of the chemical environment representations', *Physical Review B*, 106, 3 (2022), <http://dx.doi.org/10.1103/PhysRevB.106.035402> [M. Cobelli, P. Cahalane, S. Sanvito]
- 'Spectral neighbor representation for vector fields: machine learning potentials including spin', *Physical Review B*, 105, 21 (2022), <http://dx.doi.org/10.1103/PhysRevB.105.214439> [M. Domina, M. Cobelli, S. Sanvito]
- 'Fe- and Co-based magnetic tunnel junctions with AlN and ZnO spacers', *Physical Review B*, 105, 18 (2022), <http://dx.doi.org/10.1103/PhysRevB.105.184427> [G. Shukla, S. Sanvito, G. Lee]
- 'DFT-NEGF simulation study of  $\text{Co}_2\text{FeAl-MgO-Co}_2\text{FeAl}$  magnetic tunnel junctions under biaxial strain', *IEEE Transactions on Magnetics*, 58, 5 (2022), <http://dx.doi.org/10.1109/TMAG.2022.3158549> [S. Noh, S. Sanvito, S. Shin]
- 'Computational design of magnetic molecules and their environment using quantum chemistry, machine learning and multiscale simulations', *Nature Reviews Chemistry* (2022), <http://dx.doi.org/10.1038/s41570-022-00424-3> [A. Lunghi, S. Sanvito]
- 'Conservation of angular momentum in ultrafast spin dynamics', *Physical Review B*, 105, 10 (2022), <http://dx.doi.org/10.1103/PhysRevB.105.104437> [J. Simoni, S. Sanvito]
- 'Purely one-dimensional ferroelectricity and antiferroelectricity from van der Waals niobium oxide trihalides', *NPJ Computational Materials*, 7, 1 (2021), <http://dx.doi.org/10.1038/s41524-021-00602-9> [L. Zhang, C. Tang, S. Sanvito, A. Du]
- 'Atomistic simulations of surface reactions in ultra-high-temperature ceramics:  $\text{O}_2$ ,  $\text{H}_2\text{O}$  and CO adsorption and dissociation on  $\text{ZrB}_2$  (0001) surfaces', *Applied Surface Science*, 566, 150622 (2021), <http://dx.doi.org/10.1016/j.apsusc.2021.150622> [Y. Zhang, S. Sanvito]
- 'Enabling room-temperature triferroic coupling in dual transition-metal dichalcogenide monolayers via electronic asymmetry', *Journal of the American Chemical Society*, 145, 4 (2023), 2485-2491 [C. Tang, L. Zhang, S. Sanvito, A. Du]
- 'Machine-learning approach for quantified resolvability enhancement of low-dose STEM data', *Machine Learning: Science and Technology*, 4, 1 (2023), <http://dx.doi.org/10.1088/2632-2153/acbb52> [Gambini, L. and Mullarkey, T. and Jones, L. and Sanvito, S.]
- 'Designing nanoscale organic interconnects via  $\text{sp}^2/\text{sp}^3$  fluorine functionalized armchair graphene nanoribbons', *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, 288, 116153 (2023), <http://dx.doi.org/10.1016/j.mseb.2022.116153> [N. Tyagi, K.K. Jha, N.K. Jaiswal, P. Srivastava, S. Sanvito]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

- Stamenov, Plamen**, 'Exfoliation of hematite: morphological, structural and magnetic investigations', *Journal of Magnetism and Magnetic Materials*, 542 (2022), <http://hdl.handle.net/2262/97947> [A. Kumar, R. Zhang, M. Venkatesan, P. Stamenov, J.M.D. Coey]
- 'Magnetic order and magnetotransport in half-metallic ferrimagnetic Mn<sub>2</sub>Ru<sub>x</sub>Ga thin films', *Physical Review B*, 104, 6 (2021), <http://hdl.handle.net/2262/97953> [K.E. Siewierska, G. Atcheson, A. Jha (...), P. Stamenov, K. Rode]
- 'Photoluminescence modification using plasmonic nanoparticles coupled to vanadium dioxide', *OSA Optical Design and Fabrication 2021 (Flat Optics, Freeform, IODC, OFT)*, *OSA Optical Fabrication and Testing* (2021) [S. Cunningham, C. Hrelescu, G. Atcheson, P. Stamenov, A.L. Bradley]
- 'Stability of Mn<sub>2</sub>Ru<sub>x</sub>Ga-based multilayer stacks', *Thin Solid Films*, 745, 139104 (2022), <http://hdl.handle.net/2262/98369> [G. Atcheson, K. Siewierska, J.M.D. Coey, K. Rode, P. Stamenov]
- 'Highly conductive networks of silver nanosheets', *Small* (2022), <http://hdl.handle.net/2262/98370> [A.G. Kelly, J. O'Reilly, C. Gabbett (...), P. Stamenov, J.N. Coleman]
- 'Deformation and necking of liquid droplets in a magnetic field', *Physics of Fluids* (2022) [S. Poulouse, J.A. Quirke, P. Stamenov, M.E. Möbius, J.M.D. Coey]
- 'Composition engineering of ultra-soft-magnetic Co-based alloys', *Journal of Alloys and Compounds*, 924 (2022), <http://dx.doi.org/10.1016/j.jallcom.2022.166366> [H. Ahmadian Baghbaderani, A. Masood, K.L. Alvarez (...), P. McCloskey, P. Stamenov]
- Venkatesan, Munuswamy**, 'Ex situ and in situ magnetic phase synthesised magneto-driven alginate beads', *Journal of Colloid and Interface Science*, 610 (2022), 741-750 [U. Bimendra Gunatilake, M. Venkatesan, L. Basabe-Desmonts, F. Benito-Lopez]
- 'Deformation and necking of liquid droplets in a magnetic field', *Physics of Fluids* (2022) [S. Poulouse, J.A. Quirke, P. Stamenov, M.E. Möbius, J.M.D. Coey]
- 'Evaporation of water and urea solution in a magnetic field; the role of nuclear isomers', *Journal of Colloid and Interface Science*, 629 (2023), 814-824 [S. Poulouse, M. Venkatesan, M. Möbius, J.M.D. Coey]
- 'Composition engineering of ultra-soft-magnetic Co-based alloys', *Journal of Alloys and Compounds*, 924 (2022), <http://dx.doi.org/10.1016/j.jallcom.2022.166366> [H. Ahmadian Baghbaderani, A. Masood, K.L. Alvarez (...), M. Venkatesan *et al.*]
- 'Single-pulse all-optical switching in amorphous Dy<sub>x</sub>Co<sub>1-x</sub> and Tb<sub>x</sub>Co<sub>1-x</sub>', *Applied Physics Letters*, 120 (2022), 112401-1-112401-6 [Z. Hu, J. Besbas, R. Smith, N. Teichert, G. Atcheson, K. Rode, P. Stamenov, J.M.D. Coey]
- 'Stability of Mn<sub>2</sub>Ru<sub>x</sub>Ga-based multilayer stacks, eds G. Atcheson, K. Siewierska, J.M.D. Coey, K. Rode, P. Stamenov', *Thin Solid Films*, 745 (2022), 139104-1-139104-6 [G. Atcheson, K. Siewierska, J.M.D. Coey, K. Rode, P. Stamenov]
- 'Bonded Sm-Fe-N permanent magnets', *Modern Permanent Magnets*, eds J.B. Croat, J. Ormerod, Amsterdam, Elsevier Amsterdam (2022), Chapter 9 [J.M.D. Coey]
- 'Metallic nitride and carbide perovskites - history and prospects', *Journal of Solid State Science and Technology*, 11 (2022), 055002-1-055002-11 [J.M.D. Coey, D. Givord, D. Fruchart, J.B. Goodenough]
- 'Noncollinear ferrimagnetism and anomalous Hall effects in Mn<sub>4</sub>N thin films', *Physical Review B*, 106 (2022), L060409 [Y. He, S. Lenne, Z. Gercsi, G. Atcheson, J. O'Brien, D. Fruchart, K. Rode, J.M.D. Coey]
- 'Magnetic forces in paramagnetic fluids', *Journal of Physics Condensed Matter*, 35, 5 (2022), 053002 [T. Butcher, J.M.D. Coey]
- 'Electrical detection of magnetic skyrmions in a magnetic tunnel junction', *Advanced Electronic Materials*, 9 (2022), 2200570 [Y. Guang, L. Zhang, J. Zhang (...), X. Han, G. Yu]

## Recent publications – Faculty of Science, Technology, Engineering and Mathematics

'Au<sub>4</sub>Mn: a localized ferromagnet with strong spin-orbit coupling, long-range ferromagnetic exchange, and high Curie temperature', *Physical Review B*, 106 (2022), 1-8 [Y. He, Z. Gercsi, R. Zhang (...), P. Stamenov, J.M.D. Coey]

'Preparation of Fe-Pt powders from ingot by a simple and cost-effective spark erosion device', *Crystal Research and Technology*, 57, 11 (2022), <http://dx.doi.org/10.1002/crat.202200117> [P. Tozman, Y. Takahashi, M. Venkatesan, L. Monzon, M. Coey, O. Kamer]

'Electrode material for high performance symmetric supercapacitors based on superparamagnetic Fe<sub>3</sub>O<sub>4</sub> nanoparticles modified with cetyltrimethylammonium bromide', *Synthetic Metals*, 287, 117080 (2022), <http://dx.doi.org/10.1016/j.synthmet.2022.117080> [M. Sathyan, P.J. Jandas, M. Venkatesan, S.C. Pillai, H. John]

**Weaire, Denis**, 'Physics in a small bedroom', *Imagine Math* 8, eds M. Emmer, M. Abate, Springer (2022) [D. Weaire, S. Hutzler, A. Irannezhad, K. Cox]

'Buckling of a tilted line of confined hard spheres', *Philosophical Magazine*, 102 (2022), 2506-2524 [A. Irannezhad, D. Weaire, A. Mughal, J. Ryan-Purcell, S. Hutzler]

**Zhang, Hongzhou**, 'Erratum to: Interface structure and strain controlled Pt nanocrystals grown at side facet of MoS<sub>2</sub> with critical size (Nano Research, (2022), 15, 9, (8493-8501), 10.1007/s12274-022-4449-5)', *Nano Research*, 15, 9 (2022), 8674 [Y. Zhu, Y. Sun, H. Zhang, Y. He, W. Liu, R. Wang]

'Interface structure and strain controlled Pt nanocrystals grown at side facet of MoS<sub>2</sub> with critical size', *Nano Research*, 15, 9 (2022), 8493-8501 [Y. Zhu, Y. Sun, H. Zhang, Y. He, W. Liu, R. Wang]

'Alkali-activated fly ash cured with pulsed microwave and thermal oven: a comparison of reaction products, microstructure and compressive strength', *Cement and Concrete Research*, 166 (2023), 107104 [S. Shi, H. Li, Q. Zhou, H. Zhang, P.A.M. Basheer, Y. Bai]