

## 2023\_24 IMPACT – Conferences, publications, outreach, and awards

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### Conferences

11th Analytical Biosciences Group Early Career Researcher Meeting 2024, Royal Society of Chemistry, Nottingham, UK (March 14-15);

14th European Nutrition Conference FENS 2023, Belgrade, Serbia (November 2023). Poster

21st International Symposium On Problems of Listeria and Listeriosis" (ISOPOL), Quadram Institute Norwich (September 2024). Poster

34th European Crystallography Association Meeting (ECM), Padova Italy (August 2024) - Poster at the main conference and 15-min talk at Young Crystallographers satellite meeting "Droplet microfluidics for uniform crystallisation and rapid mixing."

35th International Symposium of the European Society of Nematologists, Córdoba, Spain (15-19 April 2024)"Investigating the functional properties of the nematode nAChR EAT-2 in *Xenopus laevis*"  
Authors Henry Nvenankeng, Vincent O'Connor, Lindy Holden-Dye, Fernando Calahorro, Jim Goodchild, Philippa Harlow.

35th Symposium of the European Society of Nematologists (ESN), Cordoba, Spain (April 24). presentation titled as "Bioinformatic approach to identify gut related targets with potential to mitigate parasitic infection" Authors: Liliana Jeziorska, James Dillon, Vincent O'Connor and Marcus Guest.

38th Annual Protein Society Conference, Vancouver, Canada (July 22-26)

4th Crick International Cancer Conference (October 2023) "Predicting Personalised Medicine Regimens in Four Cancers of Unmet Need" Authors: Joanna Renaut, Dr Ajay Mistry, Dr John George, Dr Frances MG Pearl

AFM & SPM Meeting 2024, Durham, UK (26 – 28 March 2024) Poster "FUNDAMENTAL AND SYNTHETIC BIOLOGY APPLICATIONS OF INDIVIDUAL HELICAL FILAMENT STRUCTURAL ANALYSIS BY THREE-DIMENSIONAL CONTACT POINT RECONSTRUCTION AFM" Authors: Kinga Kuliga, Claudia Chitty, Wei-Feng Xue

Algae UK Winter Conference (2024). "Novel application of modified microalgae for disease management in oyster aquaculture". Amy Lovegrove, Chris Hauton, Tom Bibby, Colin Robinson.

American Ageing Association Conference 2024 - Madison Wisconsin USA - An experimental microbiota that protects against multiple measures of age-related ill-health in the model organism *C. elegans* - Laura Freeman, Nathan Dennis, Mireya Vazquez Prada, Feng Xue, Antonis Karamalegos, Michael Samuel, Jennifer Watts, Marina Ezcurra - 2nd to 5th June 2024

Applied Microbiology ECS Research Symposium, UWE, Bristol (May 2024) Poster

BACR conference: Response and Resistance in Cancer Therapy

Biomass Biorefinery Network (BBNET), Sheffield, UK (April 23)

Bi-Omics Conference, Southampton (June 2024)- Talk

British Association for Cancer Research (BACR), Canterbury, UK (July 24). "Investigating the Transcription Factor ZFY as a Potential Cancer-Testis Antigen Candidate" Authors: Isabella Garcia, Dr Lee Larcombe, Dr Tim Fenton, Dr Peter Ellis.

British Phycological Society Conference (2024). "Novel application of modified microalgae in Pacific oyster mineralisation and growth manipulation" Authors: Amy Lovegrove, Chris Hauton, Tom Bibby, Colin Robinson.

British Society for Cell Biology Annual Meeting: European Cytoskeleton Forum – Cell Migration 90th Harden Conference (April 2024). "Investigating the role of molecular motors in neuronal connectivity poster presentation."

British Society for Research on Ageing Annual Conference - University of Birmingham (4th to 6th September 2024). "An experimental microbiota that protects against multiple measures of age-related ill-health in the model organism *C. elegans*" Authors: Laura Freeman, Nathan Dennis, Mireya Vazquez Prada, Feng Xue, Antonis Karamalegos, Michael Samuel, Jennifer Watts, Marina Ezcurra -

BSMM conference (June 2024). Presentation

BSRA Annual Scientific Meeting, University of Birmingham UK (September 2024), Elevated talk and Poster Presentation "Understanding the role of SKN-1B in appetite regulation"

Cancer Research UK (CRUK), Data-driven cancer research conference (February 2024) "Predicting Personalised Medicine Regimens in Four Cancers of Unmet Need" Authors: Joanna Renaut, Dr Ajay Mistry, Dr John George, Dr Frances MG Pearl

CCP4 Study Weekend, Nottingham (Jan 24) - Poster "Droplet microfluidics for time-resolved serial crystallography"

CCP4 Study Weekend, Nottingham, UK (January 2024)- Poster

Cell Biology of Metals GRC (2023), Vermont, USA - Poster

CENTURI Conference 2023, Research Institute Scientists De Cargèse, Corsica, France (October 2023).Poster presentation - "Information networks in biological systems"

Chemistry and Biology of Tetrapyrroles - Gordon Research Conference. Poster and Talk. Title of poster and talk: "Characterisation of BzaC, an O-methyltransferase involved in the anaerobic biosynthesis of vitamin B12" Authors: Sam Jones, Dr Andrew Lawrence, Professor Martin Warren

Chemistry and Biology of Tetrapyrroles GRS/GRC 2024, Rhode Island, USA - Poster

Clock club, Suzukii, Bristol, UK, (2024) genetic basis of interspecies oviposition impacting the horticultural pest D.

Collaborative Computing Project for Nuclear Magnetic Resonance (CCP NMR) Conference, Kent, UK (July 2024) Poster presentation "Quantifying the passive permeability of clinically relevant

compounds across a variety of biological membranes" Authors: Matthew Rice, Professor Jennifer R Hiscock & Dr Jose L. Ortega-Roldán

Compass Pathways POP-IN 2023 (November 2023) "Investigating the Role of 5-HT Receptor Subtypes in the Modulation of Cell Specific Immune Function" Authors: Jamie Thomas, Max Ahmed, Diego Gomez-Nicola

Conformational Design in Drug Discovery, GSK Stevenage, UK (March 7th).

De Novo Design of Metallocoffin Enzymes (poster), Alex Cahill & Bruce R. Lichtenstein,

Department of Global Health and Infection, Brighton and Sussex Medical School, University of Sussex, 2TB, AMR, and Emerging Pathogens Discovery Group, UK Health Security Agency, Porton Down, Salisbury, School of Biological Sciences, University of Southampton

ECR Connect- Turing institute, London (March 2024)- Poster

EMBO breathless microbes course 2022, Wageningen - Poster

Euro-MIC Conference, Lisbon, Portugal (July 2024).

European Calcified Tissue Society (ECTS), Marseille, France (May 24). Poster Presentation: "Raman spectroscopy coupled with machine learning unveils temporal cell-associated extracellular matrix signatures for early classification of osteosarcoma cell lines" Authors: Theo Hornsey<sup>1\*</sup>, Aikta Sharma<sup>2\*</sup>, Lysanne Michels<sup>1</sup>, Jemma Kerns<sup>3</sup> and Claire E Clarkin<sup>1.1</sup>. School of Biological Sciences, Highfield Campus, University of Southampton<sup>1</sup> 2. Department of Mechanical Engineering, University College London, 3. Lancaster Medical School, Faculty of Health and Medicine, Lancaster University, \*authors contributed equally to this work"

European Magnetic Resonance (Euromar) Congress, Bilbao, Spain (July 2024) Poster presentation "Quantifying the passive permeability of clinically relevant compounds across a variety of biological membranes", Matthew Rice, Professor Jennifer R Hiscock & Dr Jose L. Ortega-Roldán

European Society for Animal Cell Technology (ESACT), Edinburgh, June 2024. Poster titled "Investigating Genome Packaging during Recombinant AAV (rAAV) Gene Therapy Viral Vector Production"

European Synchrotron Radiation Facility (ESRF) User Meeting, Grenoble France (February 2024) - Poster and oral presentation "Droplet microfluidics for time-resolved serial crystallography"

Evergreen Phage Conference Olympia, USA (2023) - Poster

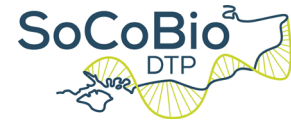
FASEB's Mechanism of RNA Decay Conference, Lisbon, Portugal (August 2024) - presented a 15-minute talk titled 'A novel role for DIS3L2 and LIN28B in regulating RNA stability during the cellular stress response'. Authors: Hope J. Haime, Lucy J. Minkley, C. Mark Smales, Sarah F. Newbury and Benjamin P. Towler.

Genetics Society conference in Nov 2023 - Poster titled "The role of phenotypic and genetic plasticity on tomato domestication"

GRS/GRC Bacterial Cell Surfaces (June 2024) Poster "Biophysical Characterisation of Recombinant E. coli Vesicles"



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IMC12, Maastricht, Netherlands (August 2024), "Rhamnolipids: Antifungals for Mucormycosis?"

Jacob Hudson, Marta Farre Belmonte, Gary Robinson, Rebecca A. Hall

International Conference of Raman Spectroscopy- Poster Presentation

International Plant Protection Congress/International Verticillium Symposium, Athens, Greece (July 23)

ISRT Annual Meeting 2024 Weybridge, UK (September 2024) - poster presentation

Klebsiella Epidemiology and Biology Symposium 2024, Institut Pasteur, Paris, France-Talk

Klebsiella Seminar Series 2024 (online) - Poster

MAPSS Meeting Metabolism, "Aging, Pathogenesis, Stress, and Small RNAs in *C. elegans*"

Microbiology Society Annual Conference, Edinburgh, UK (April 2024).

Microbiology Society, "Categorising and exploiting Mycobacterium tuberculosis biofilm-derived phenotypes using a luciferase reporter biofilm model for novel drug discovery," Authors: Kaya Taylor, Christopher Moon, Jeremy Webb, Joanna Bacon, Simon J Waddell

Microglia in health and diseases, EMBO, Genoa, Italy (May 2024), Poster "Unveiling the role APOE in microglial development" Authors: Dyuti Basu Choudhury, Tim A O Muntslag, Sarah King, Diego Gomez-Nicola

Micronutrient Forum 6th Global Conference, The Hague, Netherlands (October 2023). Poster

NBIC Summit, Southampton, UK (June 2024).

Nutrition for Resilience: 6th Global MicroNutrient Forum, The Hague, Netherlands (October 2023). Posters (three abstracts accepted)""Solving Problems We Can't C: Building Datasets to Enable Monitoring of the Seasonal and Regional Dynamics of Vitamin C Provision in the United Kingdom""", David Fisher, Jenny Baverstock, Guy Poppy, Eleftheria Stavridou, ""The Importance of Accurate Food Composition Data: A Potential Butterfly Effect in Assessing Micronutrient Supply and Status""", David Fisher, Jenny Baverstock, Guy Poppy, Eleftheria Stavridou, ""Can Cultivar Selection and Foliar Mineral Applications Meaningfully Enhance Vitamin C Production in British Strawberries?""David Fisher, Jenny Baverstock, Guy Poppy, Eleftheria Stavridou,

Physiological society conference in Manchester (September 2024) Poster

Plastid Preview 2024 (September 10th and 11th 2024), oral presentation "Manipulation of chloroplast density to enhance photosynthesis and nutritional value of tomato" Authors: Erick Oliveira, Mathew J Terry and Andrew J Simkin"

PURA Syndrome Conference 2024, PURA Syndrome Foundation Global Research Network Meeting (June 24) - Presentation

QMUL CPM / UK Organ-on-a-chip Technologies Network annual symposium (November 2023) Poster - "Developing in vitro models of liver zonation", Authors: Amanda Gilbert, Simon Lane, Jonathan West, Nicole Prior



South Coast Biosciences Doctoral Training Partnership (SoCoBio DTP)  
Email [socobio@soton.ac.uk](mailto:socobio@soton.ac.uk) Website: [www.southcoastbiosciencesdtp.ac.uk](http://www.southcoastbiosciencesdtp.ac.uk)

Response and Resistance to Cancer Therapy, British Association of Cancer Research (BACR),  
Canterbury, UK (July 2024)

RHS PhD & Fellowship Symposium, RHS Wisley, UK (November 23) Oral presentation "Host plant varietal preferences of *Philaenus spumarius*: an insect vector of *Xylella fastidiosa*" Authors: Susmita Aown, Prof. Alan Stewart, and Dr Michelle Fountain.

RNA UK 2024 Conference Windermere, UK (25-28 January 2024) Poster "Identifying microRNA-mRNA networks involved in carboplatin resistance in lung and ovarian cancer" Authors: Nikolaos Sideris, Ben Towler, Martin Michaelis, Mark Wass, Leandro Castellano.

RNA UK Conference, Windermere, UK (January 2024) - presented an in-person poster titled 'Characterising the role of novel DIS3L2 transcript targets within the cellular stress response'. Authors: Hope J. Haime, Benjamin P. Towler, C. Mark Smales and Sarah F. Newbury.

RSC South-West Regional Meeting held at University of Southampton, UK (16 January 2024)

Seoul Symposium on Bone Health (SSBH), Seoul, Republic of Korea (June 24). Oral Presentation: "Raman Spectroscopy Coupled with Machine Learning Unveils Sexually Distinct Cell-Associated ECM Signatures for Diagnosis of Bone Pathologies" Authors: Theo Hornsey<sup>1</sup>, Aikta Sharma<sup>2</sup>, Lysanne Michels<sup>1</sup>, Jemma Kerns<sup>3</sup>, Thomas O' Learly<sup>4</sup>, Julie Greeves<sup>4</sup>, Claire Clarkin<sup>11</sup> University of Southampton, School of Biological Sciences, 2 University College London, UK. Southampton, UK. 3Lancaster University, Lancaster, UK. 4Army Health and Performance Research, Andover, UK.

Society of Experimental Biology (SEB) Annual Conference, Prague, Czech Republic (July 2024) Poster: "Domesticate this, not that: the implications of mutation rate and selection on present-day agriculture." Authors: Kolesnikova, A., Dodsworth, S., Pérez Barrales, R., Bourgeois, Y., Chapman, M.

South Coast RNA Network Meeting 2023 (December 2023), University of Kent Poster: Identifying microRNA-mRNA networks involved in carboplatin resistance in lung and ovarian cancer Nikolaos Sideris, Ben Towler, Martin Michaelis, Mark Wass, Leandro Castellano

South Coast RNA Network Meeting, University of Kent, UK (December 2023) - oral presentation "Investigating the mechanism of action of novel DIS3L2, stress-responsive targets within the cellular stress response" Authors: Hope J. Haime, Benjamin P. Towler, C. Mark Smales and Sarah F. Newbury.

Southwest Structural Biology Consortium (SWSBC), Bath (July 24) - Oral talk "Droplet microfluidics for time-resolved serial crystallography"

Southampton Eye Unit 30th Anniversary Conference, Southampton, June 2024 – "Lysosomal biology – a view from the retinal pigment epithelium"

Southampton Imaging Conference- Imaging Across Scales from molecules to humans at University of Southampton Highfield Campus (12- 13 June 2024): Poster title: "FUNDAMENTAL AND SYNTHETIC BIOLOGY APPLICATIONS OF INDIVIDUAL HELICAL FILAMENT STRUCTURAL ANALYSIS BY THREE-DIMENSIONAL CONTACT POINT RECONSTRUCTION AFM" Authors: Kinga Kuliga, Claudia Chitty, Wei-Feng Xue

Sussex Memory Workshop - Brighton, UK (January 2024)

The 5th International Conference on Base Editing, Prime Editing & Related Enzymes - Deaminet 2024, San Diego, California, USA (January 2024)

Transcription and Chromatin UK (Biochemical Society), Liverpool, UK (October 23)- Poster

United Nations Ocean Decade Conference (April 2024). "Using sustainably modified, lipid-dense microalgae to manage *Vibrio* spp. infections in oyster aquaculture". Authors: Amy Lovegrove, Chris Hauton, Tom Bibby, Colin Robinson.

University of Wisconsin-Madison USA, (June 24) Poster "Understanding the role of SKN-1B in appetite regulation", Authors: Novianne McLean, Lydia Bennett, Jennifer Tullet

Wisley Royal Horticultural society genetic basis of interspecies oviposition impacting the horticultural pest *D. suzukii* (November 2023)

### Articles published in a peer refereed journals relating to SoCoBio DTP research

**Chitty C**, Kuliga K, Xue WF. Atomic force microscopy 3D structural reconstruction of individual particles in the study of amyloid protein assemblies. *Biochem Soc Trans.* 2024 Apr 24;52(2):761-771. doi: 10.1042/BST20230857. PMID: 38600027.

**Clark AJ**, Atkinson SR, Scarponi V, Cane T, Geraldi NR, Hendy IW, Shipway JR, Peck M. Cost-effort analysis of Baited Remote Underwater Video (BRUV) and environmental DNA (eDNA) in monitoring marine ecological communities. *PeerJ.* 2024 Apr 30;12:e17091. doi: 10.7717/peerj.17091. PMID: 38708339; PMCID: PMC11067900.

Allam T, Balderston DE, Chahal MK, Hilton KLF, Hind CK, **Keers OB**, Lilley RJ, Manwani C, Overton A, Popoola PIA, Thompson LR, White LJ, Hiscock JR. Tools to enable the study and translation of supramolecular amphiphiles. *Chem Soc Rev.* 2023 Oct 16;52(20):6892-6917. doi: 10.1039/d3cs00480e. PMID: 37753825.

**Rothschild-Rodriguez D**, Hedges M, Kaplan M, Karav S, Nobrega FL. Phage-encoded carbohydrate-interacting proteins in the human gut. *Front Microbiol.* 2023 Jan 6;13:1083208. doi: 10.3389/fmicb.2022.1083208. PMID: 36687636; PMCID: PMC9853417.

**Somers, A.**, Baverstock, J., Calder, P., Gawthrop, F., Stavridou, E., Poppy, G. (2023) Dietary Studies, Guidelines and Recommendations: Exploring Solutions to Folate Deficiency in the United Kingdom—Parsnips as a Case Study for Dietary Intervention. *Proceedings 2023*, 91(1), 386; <https://doi.org/10.3390/proceedings2023091386>

**Jack Stubbs**, Theo Hornsey, Niall Hanrahan, Luis Blay Esteban, Rachel Bolton, Martin Malý, Shibom Basu, Julien Orlans, Daniele de Sanctis, Jung-uk Shim, Patrick D. Shaw Stewart, Allen M. Orville, Ivo Tews, and Jonathan West (2024) Droplet microfluidics for time-resolved serial crystallography, *International Union of Crystallography Journal* (<https://doi.org/10.1107/S2052252524001799>).

Bolton, R., Machelett, M.M., **Stubbs, J.**, Axford, D., Caramello, N., Catapano, L., Malý, M., Rodrigues, M.J., Cordery, C., Tizzard, G.J. and MacMillan, F., 2024. A redox switch allows binding of Fe (II) and Fe



(III) ions in the cyanobacterial iron-binding protein FutA from *Prochlorococcus*. Proceedings of the National Academy of Sciences, 121(12), p.e2308478121. <https://doi.org/10.1073/pnas.2308478121>

Dekham, K., **Jones, S.M.**, Jitrakorn, S. et al. Functional and genomic characterization of a novel probiotic *Lactobacillus johnsonii* KD1 against shrimp WSSV infection. *Sci Rep* 13, 21610 (2023). <https://doi.org/10.1038/s41598-023-47897-w>

Hervé RC, Bryant C, **Sutton L**, Cox C, Gião MS, Keevil CW, Wilks SA. Impact of different hand drying methods on surrounding environment: aerosolization of virus and bacteria and transference to surfaces. *J Hosp Infect.* 2024 Mar 21:S0195-6701(24)00099-9. doi: 10.1016/j.jhin.2024.03.005. Epub ahead of print. PMID: 38521417.

Bojkova D, Bechtel M, Rothenburger T, Steinhorst K, Zöllner N, Kippenberger S, Schneider J, Corman VM, **Uri H**, Wass MN, Knecht G, Khaykin P, Wolf T, Ciesek S, Rabenau HF, Michaelis M, Cinatl J Jr. Drug Sensitivity of Currently Circulating Mpox Viruses. *N Engl J Med.* 2023 Jan 19;388(3):279-281. doi: 10.1056/NEJMc2212136. Epub 2022 Dec 28. PMID: 36577096.

Hayes LJ, **Uri H**, Bojkova D, Cinatl J Jr, Wass MN, Michaelis M. Impact of the COVID-19 pandemic on the circulation of other pathogens in England. *J Med Virol.* 2023 Jan;95(1):e28401. doi: 10.1002/jmv.28401. PMID: 36512325; PMCID: PMC9877778.

A multi-disciplinary commentary on preclinical research to investigate vascular contributions to dementia(2023) Sarmi Sri, Adam Greenstein, Alessandra Granata, Alex Collicutt, Angela C C Jochems, Barry W McColl, Blanca Díaz Castro, Caleb Webber, Carmen Arteaga Reyes, Catherine Hall, Catherine B Lawrence, Cheryl Hawkes, Chrysia-Maria Pegasiou-Davies, Claire Gibson, Colin L Crawford, Colin Smith, Denis Vivien, Fiona H McLean, Frances Wiseman, Gaia Brezzo...**Letitia McMullan** et al *Cerebral Circulation-Cognition and Behavior*, doi: 10.1016/j.cccb.2023.100189

Research Culture: Using reflective practice to support PhD students in the biosciences - E life - 23rd January 2024 - JENNIFER TULLET, JENNIFER LEIGH, **BRANDON COKE, DAVID FISHER, JOHANNA HASZCZYN, STEVEN HOUGHTON, JOHANNA FISH, LAURA FREEMAN, ISABELLA GARCIA, STEFAN PENMAN, EMMA HARGREAVE**

Njaci, I., Waweru, B., Kamal, N., Muktar, M.S., **Fisher, D.** et al. Chromosome-level genome assembly and population genomic resource to accelerate orphan crop lablab breeding. *Nat Commun* 14, 1915 (2023). <https://doi.org/10.1038/s41467-023-37489-7>

#### Other publications (for example pre-prints)

**Buchanan R**, Matechou E, Katzer F, Tsaousis AD, Farré M. Global Prevalence of *Cryptosporidium* Infections in Cattle and *C. parvum* genotype distribution: A Meta-Analysis [Internet]. 2024. Available from: <http://biorxiv.org/lookup/doi/10.1101/2024.07.16.603704>

Oliveira, L., **Cahill, A.**, Wuscher, L., Green, K. R., Bremmer, V., Lichtenstein, B. R. (2024) Investigating the effect of fusion partners on the enzymatic activity and thermodynamic stability of poly(ethylene terephthalate) degrading enzymes. *Faraday Discussions*. doi:10.1039/D4FD00067F

**Joseph F.S. Davies**, Andrew Daab, Nicholas Massouh, Corey Kirkland, Bernadette Strongitharm, Andrew Leech, Marta Farré, Gavin H. Thomas, Christopher Mulligan. Structure, substrate selectivity

determinants and membrane interactions of a Glutamate-specific TAXI TRAP binding protein from *Vibrio cholerae*. bioRxiv 2024.03.22.586268; doi: <https://doi.org/10.1101/2024.03.22.586268>

Pearce, J.E., Hodgson, J., Folgueiras-Amador, A.A., Carroll, R.C., **Fish, J.**, Coles, S.J., Parsons, P.J., Brown, R.C.D., Harrowven, D.C. The Electrosynthesis of Highly Encumbered Biaryls from Aryl o-Iodobenzyl Ethers by a Radical to Polar Crossover Sequence, ChemCommun. (pending submission).

**Charles Ellis\***, **Natasha L Ward\***, **Matthew Rice\***, Neil J Ball, Jean-Charles Lambert, Benjamin T Goult. The structure of an Amyloid Precursor Protein/talin complex indicates a mechanical basis of Alzheimer's Disease. BioRxiv (2024) \*Contributed equally to this paper. Open Access Biology Under Review.

Paper submitted to Genome Biology on 5th August 2024. Towler BP, Rogoyski OM, Pienaar CK, Pueyo Marques JI, **Haime HJ**, Bernard EIM, Couso J, Newbury SF. 2024. The 5'-3' exoribonuclease Pacman is involved in long-non-coding RNA degradation and non-canonical translation events. Genome Biology. (Preprint)

Research culture: using reflective practice to support PhD students in the biosciences: <https://doi.org/10.7554/eLife.92365>. **Haszczyń, J., Fish, J., Tullet, J.** (2024). Using reflective practice to support postgraduate studies in the biosciences. THE, online: <https://www.timeshighereducation.com/campus/using-reflective-practice-support-postgraduate-studies-biosciences>.

**Garcia, I** and Larcombe, L. (2024). Exploring the perturbation of biological processes caused by gene upregulation using knock-in transfection, transcriptomics and bioinformatics analysis. Springer Nature Series: Methods in Molecular Biology. - Accepted, waiting on publication

**Kolesnikova A.**, Hammond J., Chapman, M. A. (2024) Drought response in the transcriptome and ionome of wild and domesticated *Lablab purpureus*, an underutilised legume. (submitted to Plants, People, Planet)

Pope, M., Hauke, E., Davis, N., Kale, R., **Kolesnikova, A.**, & Lee, T., 2024. Pushing the Boundaries of Reflection: The Answer's on a postcard. Exchanges: The Interdisciplinary Research Journal, 11(2), 1-28. Available at: <https://doi.org/10.31273/eirj.v11i2.1245>.

Matvey Pilagov, Sonette Steczina, **Ateeqa Naim**, Michael Regnier, Michael A. Geeves, Neil M. Kad (2024). Spatially resolving how phosphorylation affects  $\beta$ -cardiac myosin activity in porcine myofibril sarcomeres with single molecule resolution. bioRxiv 2024.06.27.600847; doi: <https://doi.org/10.1101/2024.06.27.600847>

Paper submitted to Genome Biology on 5th August 2024. Towler BP, Rogoyski OM, **Pienaar CK**, Pueyo Marques JI, Haime HJ, Bernard EIM, Couso J, Newbury SF. 2024. The 5'-3' exoribonuclease Pacman is involved in long-non-coding RNA degradation and non-canonical translation events. Genome Biology. (Preprint)

Smith, N. J., Reddin, I., **Policelli, P.**, ... Fenton, T. R. (2024). Differentiation signals induce APOBEC3A expression via GRHL3 in squamous epithelia and squamous carcinoma. doi: 10.21203/rs.3.rs-3997426/v1 (PubMed, but currently in final revision with EMBO Journal)



Serrano-Sanchez A, **Rice M**, Cassar J, White L, Hiscock J.R, Ortega-Roldan JL. High-throughput solution state NMR methodology enables elucidation of small molecule-phospholipid membrane adhesion and permeation parameters. ChemComm, 2024. Under Review.

Aubrey, L. D., Lutter, L., Fennell, K., Purton, T. J., **Ward, N.**, Serpell, L. C. and Xue, W.-F. Structural reconstruction of individual filaments in A $\beta$ 42 fibril populations assembled in vitro reveal rare species that resemble ex vivo amyloid polymorphs from human brains. Preprint, bioRxiv (2023)

### Outreach activities

Brilliant Brains Neuroscience day, assisting workshops for students in years 8/9 about sensation

Bitterne Park School Science Fair, supporting annual delivery of outreach activities to school aged children, including 'grow your own organoids', and assisted with the judging of student projects/presentations.

Freddie Marsh (School student - not university), February 24, interviewed for media studies short film/documentary project about biotechnology and the future of plastic waste management.

Growing Kent and Medway group national fruit festival.

Groundswell regenerative farming event, interacted with farmers.

Hosted students from a local college in Portsmouth doing a lab practical in University of Portsmouth teaching labs. Supported students with lab skills and answered questions. June 2024.

I'm a Scientist Get Me Out of Here, October 2023-Present (General Science, Genetics, Biology and Animals in Research)(Funded by STEM Ambassadors).

LifeLab, October 23, A Level Work Experience Student shadowing work for one day.

LifeLab, April 24, Meet the Scientist

Meet the scientist, University of Southampton at Southampton General Hospital- 12 dates over the last year, talking to 11-14 year olds. 40% were from local disadvantaged backgrounds.

Meet the Scientist Day at Kanes Hill Primary School (June 6th 24) SO19 6FR. Supervising Primary school student in bone related hands-on activity including the "Bone Crayon" and answering science-based questions. (Quintile 1 POLAR4)

Mela Festival, July, 2024. Assisted in running a bone health exhibit from the school.

New Forest Show, July-August 24, Multiple days delivering science activities to public, multiple students attending from the University of Southampton.

National Fruit Show, demonstrated to people some of the protozoa that we work with using a microscope.

Outreach workshops (The Makers Guild, Admiral Lord Nelson School), using puppetry to teach youth about how enzymes can be used to degrade PET plastics.



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Pint of Science, multiple students from the University of Southampton were involved in Southampton activities for this event: Southampton city coordinator, organising a 'Lab Olympics' at event.

Pint of Science (Our Body), May 2024 - "Hoppy Hour: Exploring Neurodivergence in Tadpoles" (30 minute talk).

Participated in multiple 'I'm a Scientist' sessions. This involves engaging with school students in real time text-based chats and explaining what scientist do day-to-day, how one becomes a scientist, etc.

Research Assistant in developing virtual reality experiences in molecular and precision biosciences which resulted in trialling a virtual reality experience trial at Hounslow School, Southampton (April 2024). Students engaged and interacted with virtual reality to better understand protein structure and function.

School visit to support HEIF grant project ran by supervisor – engaged children in learning more about climate change effects on agriculture and what a day in a scientist's life looks like. Highfield CE Primary School, 22 April, 2024.

Soapbox Science Brighton 2024, 1st July 2024, oral presentation using props to present my PhD research to the general public. I used a 3D model of adult Meadow spittlebug, my study insect along with a poster, live plants with young Meadow spittlebugs on the plants, and some dried adult specimens to show the different life stages.

Southampton Mela Festival 2024 (Saturday 13 July) - with the UoS Roadshow. This was a community festival organised by Arts Aisa celebrating the South's Asian communities. As part of the UoS roadshow, I was involved in discussion with members of the public about our research, including spirited discussions about sex bias, and the affects of aging on bone.

STEM Ambassadors, February 2024 – Present

Student led, academic facilitator delivering workshops about my PhD subject to school children, year groups Yr9 and Yr10 throughout the year.

Sussex Student Ambassador from 2021 to 2024 where I have assisted with numerous Open Days and Applicant Visit Days. I supported laboratory demonstrations and presented Student Experience talks to prospective students and parents.

The Mullany Fund: Mentor for three students from poverty in Wales to help guide them towards their future careers in STEM (all year, 2 hours a week, aged 15-17). Online support.

Twilight sessions, School of chemistry, University of Southampton, helping demonstrate lab experiments and encouraging future work in STEM subjects. Multiple dates in July, ages 16-18.

University of Southampton Science and Engineering Day(SOTSEF), March 2024, multiple SoCoBio DTP students at Southampton were involved in this event: running hands-on exhibits about intercropping and plant plasticity that involved real-life plants grown under different conditions and a competition related to intercropping; delivering a cell culture activity; demonstrating the nature of research done in the Biophotonics lab to school children; engaging with Children and their guardians about risks of dementia in a Snakes & Ladders format; presenting a lay poster – "Lysosomes – our



South Coast Biosciences Doctoral Training Partnership (SoCoBio DTP)  
Email [socobio@soton.ac.uk](mailto:socobio@soton.ac.uk) Website: [www.southcoastbiosciencesdtp.ac.uk](http://www.southcoastbiosciencesdtp.ac.uk)



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cell's rubbish disposal centre" and interacted with the general public (5000+ attendees) discussing the retina and the effects of diet; Participating in the "Bone Crayon" and Studio Lab stand interacting with members of the public and children to teach them about our research - Including colouring with bone crayons, pom-pom making and explanation of 3D prints of bone. In collaboration with the artist Louise Fraser.

University of Southampton School of Biological Sciences Outreach festival, March 2024, this event is open to local educators to allow University Researchers to showcase their work through outreach projects. Multiple SoCoBio DTP students at Southampton were involved in this event: running a virtual reality experience; aiding in setup and running of the event; created a game to illustrate RNA read mapping to genome; supported with the annual delivery of the 'Building Neuronal Networks' to communicate the complexity of the brain and neuroscience to a lay audience, including young children to adults from a lay background.

University of Portsmouth, February 2024 - May 2024, student volunteer, funded from the Royal Academy of Engineering project "Enzymes as puppet engineers of the imagination". Contributed to two hands-on art/science related sessions, helping participants to understand the enzymatic recycling of plastics through creating puppet from plastic materials and mini science games. One location was Admiral Lord Nelson school in Portsmouth with the participants being school students. The other location was on Guildhall (Portsmouth) with the participants being young people living in foster care.

University of Portsmouth, September 2024: Ran an outreach activity with a group of A-Level students visiting the university comprising of two microscopy and dissection sessions with a focus on entomology.

Widening Participation and Social Mobility Team, July 2024, visit to the Island Free School in the Isle of Wight in order to increase uptake and share knowledge of higher education as students from the island are far less likely to go onto university, or finish a higher level of education.

Windsor Fellowship career talk, London (Burlington House), June 2024. Talked to underrepresented ethnic groups and extremely deprived children about career plans and future prospects, as well as demonstrating my career. Children aged 14-18.

Work experience Week as a student ambassador for a non-academic audience (school-age students from a variety of local schools from low quintile regions).

Working with students on a one-on-one basis from educationally disadvantaged backgrounds to provide support with biology tuition and university applications.

### **Awards (SoCoBio DTP/DTP partners)**

1st Place 'Craft Your Thesis' at Festival of Doctoral Research (University of Portsmouth) and 2nd Place in 5 by 5 talks.

1st Place poster prize at NATS PGR conference at university of Kent



South Coast Biosciences Doctoral Training Partnership (SoCoBio DTP)  
Email [socobio@soton.ac.uk](mailto:socobio@soton.ac.uk) Website: [www.southcoastbiosciencesdtp.ac.uk](http://www.southcoastbiosciencesdtp.ac.uk)



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3rd place award for best poster presentation. School of Biological Sciences PhD symposium - University of Southampton

Awarded £250 from Brighton and Sussex Medical School in the form of a Post-graduate student Travel Grant to support my attendance at the RNA UK 2024 Conference.

Awarded 1st place for Best Presentation titled 'Investigating a novel role for DIS3L2 within the cellular stress response' at the University of Sussex Biochemistry Departmental Away Day (12th June 2024) in Brighton, UK. Prize was £75 amazon voucher.

Awarded first place at the SussexDocFest 2024 for the research poster competition and first place at the Sussex Life Sciences PhD Symposium for best research presentation.

Best poster prize for poster titled "Engineering enzymes for the deconstruction of waste polyester textiles" (first rotation project), School of Biological Sciences post graduate research conference.

Doctoral College Director's Award 2024 for Public Engagement and Outreach – winner £100 prize money

School of Biological Sciences PhD Symposium, 24th June 2024, 2nd place for Poster Presentation - £50 prize money

Faculty of Medicine conference, Southampton, June 2024 - Award: Poster Presentation Winner 2024 – Outstanding performance and excellence

Honourable mention for poster presented at SoBS Symposium, June 24

Nominated for two Doctoral College Awards.

The prize for best CASE scientific poster at the SoCoBio Annual Conference 2024

### External Awards

A Travel Grant Award from the British Society for Research on Ageing (BSRA) 2024

Awarded £200 from the Biochemical Society (General Travel Grant) to support my attendance at FASEB's Mechanism of RNA Decay 2024 Conference in Lisbon, Portugal.

Awarded £750 from the Genetics Society (Junior Scientist Travel Grant) to support my attendance at FASEB's Mechanism of RNA Decay 2024 Conference in Lisbon, Portugal.

BBSCR microgrant March 2023 as part of the pump priming gut-brain-immune interactions and healthy aging networking meeting - awarded £1000 for research material

British Association for Cancer Research (BACR), conference poster prize

British Association for Cancer Research (BACR), Student Impact Award Winner 2024:

<https://www.bacr.org.uk/blog/bacr-2024-student-impact-award-winner>

Diversity Travel Award worth \$1,000 to attend the 38th Protein Society Conference



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NERC Environmental Omics Visitor Facility Grant - £ 31,555.80

PCRBiosystems yearly grant competition – applied but was not successful.

Fully funded participation in the BBSRC courses in software engineering, organised by the University of Oxford.

Genetics Society Travel Grant (£750)

Growing Kent and Medway Business innovation voucher ~£30,000 (possibly not public knowledge yet.)

Impact Accelerator Account Grant £7,500, BBSRC, 1st November 2023

Knowles Prize for Biotechnology and Environmental Sustainability this year. University of Kent, UK. £250

Microbiology Society: Society Event Grant 2024- Annual Conference 2024, Edinburgh International Conference Centre (EICC), UK. £350

Poster Prize, CCP NMR, 11th July 2024

Qiagen Young scientist grant 2022 - awarded \$10,000 of Qiagen products + 1-year license to CLC workbench



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