

Bethan Young

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Current Role

Research Assistant, G Kudla Group, MRC Human Genetics Unit, University of Edinburgh | Jul 2019 – Present

- Codon usage collaboration with Prof. LD Hurst (Milner Centre for Evolution, University of Bath)
 - Investigated codon usage bias and evolution of SARS-CoV-2 and other viruses; **collected, cleaned, and explored** sequence data in UNIX and R
- Technician and Tissue Culture Supervisor responsibilities
- Molecular biology techniques including cloning, mutagenesis, large-scale plasmid library preparation, protein work, and cell culture, including transient and stable transfections, and drug treatments
- Organised virtual poster session for EMBO Codon Usage Workshop 2022 on Gather; gave tutorial to 150 delegates

Relevant Experience

PhD Student Postgraduate Researcher, University of Huddersfield | 2016 – 2020

Thesis: *Identification and Development of Novel Biomarkers for the Diagnosis and Treatment of Neuropathic Pain*

- R, Excel, SPSS, GraphPad | Statistics including multiple regression and ROC analysis
- **Pioneered own research project**, planned, and conducted experiments to answer key research questions
- **Informed independent decision-making** regarding project direction using results and latest scientific literature
- **Prepared yearly reports**, manuscripts, and academic posters, and **presented results regularly** for discussion
- Presented own research at two national conferences including British Neuroscience Association in 2017
- **Supervised** three undergraduate students' final year lab-based research projects

Trustee, Huddersfield Students' Union Board | Jun 2018 – Jun 2019

- Held the Union accountable to its constitution in the interest of students at quarterly meetings
- **Engaged in focused discussions** with Trustee Board members, Union staff, and contributed to **key decision making**
- Represented the Student's Union and advocated for the interest of students at University of Huddersfield **Strategy 2019-2025 meeting** with the University's senior management team

Impact Officer, Enactus Huddersfield | Sep 2017 – Sep 2018

- **Social enterprise** project planning as an active member of the Enactus team (Rookie League Champions 2018)
- Helped to **secure funding** for our project from NUS Student Eats
- Represented Huddersfield Team at the Enactus training weekend and NUS Student Eats Conference 2018

Science Section Editor for The Global Panorama (Online News Platform) | Sep 2013 – Sep 2014

- **Wrote, proofread, and edited** news articles, **consistently met tight weekly deadlines**, and **built strong rapport** with science section contributors and the editorial team

Other Education and Experience

Assistant Manager, M & Em's Ltd (Subway Franchisee), Wrexham | Aug 2015 – Apr 2016

- Delivered high-quality customer service and effective team management on shift
- Food preparation and detail cleaning according to Food Safety and Hygiene protocols
- Assistant manager responsibilities included training new staff members and monitoring cash variance and wastage

Bioinformatics training from CRUK Cambridge Summer School (2020), BBSRC Next Generation Biologists (2017), and Dr J Bryk's Coding Club at University of Huddersfield (2017-2019)

BSc (Hons) **Medical Pharmacology** 2:1 | 2012 - 2015

Dissertation: *Targeting Exon 91/92 of RyR2 in a Human Cardiomyocyte Model of Ouabain-Induced Ca²⁺ Dysfunction*

- Quantified and analysed fluorescent Ca²⁺ wave synchronicity in cardiomyocytes

Publications

Islam B, Stephenson J, **Young B**, Manca M, Buckley DA, Radford H, Zis P, Johnson MI, Finn DP, McHugh PC. **The Identification of Blood Biomarkers of Chronic Neuropathic Pain by Comparative Transcriptomics**. Neuromolecular Med. 2021 Nov 5. doi: 10.1007/s12017-021-08694-8. Epub ahead of print. PMID: 34741226.

Abrahams L, Savisaar R, Mordstein C, **Young B**, Kudla G, Hurst LD. **Evidence in disease and non-disease contexts that nonsense mutations cause altered splicing via motif disruption**. Nucleic Acids Res. 2021 Sep 27;49(17):9665-9685. doi: 10.1093/nar/gkab750. PMID: 34469537; PMCID: PMC8464065.

Mordstein C, Cano L, Morales AC, **Young B**, Ho AT, Rice AM, Liss M, Hurst LD, Kudla G. **Transcription, mRNA Export, and Immune Evasion Shape the Codon Usage of Viruses**. Genome Biol Evol. 2021 Sep 1;13(9):evab106. doi: 10.1093/gbe/evab106. PMID: 33988683; PMCID: PMC8410142.

Rice AM, Castillo Morales A, Ho AT, Mordstein C, Mühlhausen S, Watson S, Cano L, **Young B**, Kudla G, Hurst LD. **Evidence for Strong Mutation Bias toward, and Selection against, U Content in SARS-CoV-2: Implications for Vaccine Design**. Mol Biol Evol. 2021 Jan 4;38(1):67-83. doi: 10.1093/molbev/msaa188.

Morales AC, Rice AM, Ho AT, Mordstein C, Mühlhausen S, Watson S, Cano L, **Young B**, Kudla G, Hurst LD. **Causes and Consequences of Purifying Selection on SARS-CoV-2**. Genome Biol Evol. 2021 Oct 1;13(10):evab196. doi: 10.1093/gbe/evab196. PMID: 34427640; PMCID: PMC8504154.

Referees

Referees available on request