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FREDERICK DOUGLASS CENTRE,
NEWCASTLE UNIVERSITY

Summary of presentations and posters given by students from

University of Exeter

John Bassom

4th Year BSc Medical Sciences with Professional Training Year, Exeter

Presentation:

Early c-peptide measurement assists diabetes classification and prediction of insulin requirement in adult-onset diabetes

Aim: We aimed to determine whether c-peptide measurement close to diabetes diagnosis could aid diabetes classification and prediction of early insulin requirement.

Method: We assessed utility of non-fasting c-peptide level within one year of diagnosis (median 17 weeks) in the prospective STARTRIGHT study of adult-onset diabetes (n = 1802). We assessed two scenarios: 1) predicting progression to insulin treatment within three years of diabetes diagnosis in those treated without insulin at c-peptide measurement (n=819), and 2) predicting decline to plasma c-peptide <600pmol/L (indicative of type 1 diabetes and insulin requirement), three years post-diagnosis in those who were insulin treated at diagnosis (n=469). We assessed the added value of c-peptide over other baseline features (HbA1c, age, BMI, and GAD, IA2 or ZnT8 islet-autoantibodies).

Results: In those non-insulin treated at c-peptide measurement 7.7% (n= 63) progressed to insulin treatment within three years. C-Peptide showed modest discrimination for progression to insulin (ROC AUC 0.73), which was independent of other features (p=0.045). Baseline c-peptide under 600pmol had 98% specificity and 16% sensitivity for progression to insulin treatment.

In those initially insulin treated, 64% (n=298) had c-peptide <600pmol/L after three years. Baseline c-peptide was highly discriminatory of those who progressed to insulin deficiency (ROC AUC 0.87) and predicted this outcome independently of other features (p<0.0001). Baseline c-peptide <600pmol/L had 91% specificity and 68% sensitivity for low c-peptide (<600pmol/L) after three years diabetes duration.

Conclusion: Early c-peptide measurement, within a year of diagnosis, can assist identification of type 1 diabetes and early insulin requirement.

Emily Bennett

4th Year Bachelor of Medicine Bachelor of Surgery, Truro

Poster:

Human Health Effects from Inhalation of Sea Spray during Harmful Algal Blooms: A Scoping Systematic Review

Introduction: Exposure to marine phycotoxins, primarily studied in the context of ingestion, has well-established health implications. However, the effects of inhaling these toxins, particularly via sea spray aerosols (SSAs) produced by wave activity, are less understood. In HAB-enriched environments, SSAs can contain entrapped phycotoxins, leading to local inhalation exposure. Over the last 30 years, such exposure has increasingly been linked to acute respiratory symptoms in coastal regions. This study explores the respiratory health impacts of inhaling HAB-contaminated SSAs.

Methods: This review builds on previous studies by Young et al. and Lim et al., updating findings with a literature search from May 2019 to November 2024 using databases such as PubMed and Google Scholar. Keywords included “brevetox*,” “cyano*,” and “respiratory.” After excluding criteria was implemented, 65 publications were reviewed within this paper.

Results: Over 6,400 cases of respiratory symptoms linked to SSA inhalation in HAB-affected areas were reported, including 4,600 cases with Karenia brevis, 1,575 with Ostreopsis spp., and 283 of unspecified species. Global hotspots included Florida, the Mediterranean, and the Baltic and Aegean seas. Symptoms varied from mild (runny nose) to severe (acute respiratory distress). While most outcomes were acute, only two studies reported chronic effects.

Conclusion: This study underscores the need for better understanding of pathophysiological mechanisms, standardised data collection, and longitudinal research on acute versus chronic respiratory effects of HAB-enriched SSAs. Comprehensive species-specific surveillance and improved symptom reporting are essential for advancing public health responses.

Isabel Brinkley

4th Year BSc Conservation Biology and Ecology with Professional Placement, Cornwall

Poster

Exploring gaps in awareness: Investigating public knowledge of conservation and climate action in zoos

The biodiversity and climate crisis are the biggest threats currently facing our world. To help reverse these problems, zoos and aquariums have a significant role in conservation education and increasing awareness, which can help reduce human impacts on the environment by creating a sense of stewardship in members of the public. This investigation sought to understand the levels of learning and engagement with conservation education in a zoo environment, as well as exploring climate actions carried out by the public. Covert observations showed limited levels of engagement by visitors with zoo signage, which was used as a proxy for learning. In-person surveys reflected this, since most qualitative answers from visitors about their learning were vague and generic. Additionally, surveys showed that in terms of climate action, measured levels of intention to act were low. Possible reasons for lack of engagement and action could be explained using behaviour-change frameworks and identifying potential barriers, such as personal or financial capability and/or opportunity. One way zoos can reduce barriers is through ensuring conservation education materials are accessible and inclusive to all ages and abilities. By identifying these gaps in public knowledge and awareness, this could benefit education and outreach programs run by conservation institutions in terms of focusing on areas for improvement. Future work could explore the responsibility of governing bodies versus individuals in terms of climate action, and the influence of 'charismatic' species on public engagement and education, since zoos often need to balance public attraction against species' conservation necessity.

Pierce Broderick
3rd Year BSc Mathematics with Finance, Exeter

Lucas Goriup
3rd Year BSc Mathematics, Exeter

Amy Wallington
3rd Year BSc Mathematics, Exeter

Presentation & Poster

Investigating the Impact of Geomagnetic Storms on Cetacean Navigation and Strandings

Geomagnetic storms, caused by disturbances in the Earth's magnetosphere, have been hypothesised to impact cetacean navigation and potentially lead to strandings. This study aims to investigate the potential correlations between geomagnetic storms and both cetacean navigation disruptions and strandings, in-order-to improve conservation strategies in the future. We used large datasets containing cetacean coordinates, UK stranding data, and Kp index data, carrying out multi-scale analysis techniques to visualise and quantify the relationships between these variables. Our findings highlight notable changes in cetacean navigational patterns, as well as deviations in turning angles that coincide with geomagnetic activity. However, from our statistical analysis, we conclude that the overall impact on cetaceans is low. Therefore, we believe that additional factors, such as environmental variables and human activity, may play a more prominent role in these events. This study, conducted as a group research project, underscores the complexity of cetacean navigation and highlights the importance of considering other potential causes of mass strandings.

Harry Costin

4th Year Bachelor of Medicine Bachelor of Surgery, Exeter

Poster

Catching the parasite: can rapid diagnostic tests reach the hidden population?

Over 10,000 annual maternal deaths are attributable to malaria in pregnancy (MiP). Absent training opportunities in microscopy and inaccessible healthcare within rural Colombia delays perinatal diagnosis, resulting in neonatal death, prematurity, and maternal anaemia. Rapid diagnostic kits, sensitive to peripheral malarial antigens, have been trialled to overcome limitations in microscopic diagnosis. Therefore, this systematic review aims to establish the most effective method of diagnosing MiP in rural Colombia.

Literature searches were conducted through the PubMed and Web of Science databases. Papers published within the last decade, sampled from a natural region of Colombia, sourced from peer-reviewed journals, and with accurate English translations were included. This yielded nine papers.

No statistically significant difference was found in the diagnostic performance of light microscopy (LM) and conventional rapid diagnostic testing (cRDT) for symptomatic MiP. Nominal sensitivity was displayed by cRDT and LM for asymptomatic placental infection, suggesting limitations in their diagnostic thresholds for low-grade parasitaemia. Highly sensitive RDT showed improved sensitivity for asymptomatic Plasmodium falciparum infection, capable of placental colonisation, but failed to detect non-falciparum malarial species, representing ~50% of malarial cases.

cRDT displays a diagnostic performance comparable to LM, without being limited by secondary-care access or inter-regional variations in species prevalence. Where microscopic techniques face geographical limitations, RDT could act as an effective community-level substitute for antenatal MiP diagnosis with minimal training requirements, reducing perinatal diagnostic delays and adverse maternal outcomes. However, further research assessing the role of RDT in identifying asymptomatic placental infection is required to reinforce its diagnostic accuracy.

Natasha Duxbury

4th Year BSc Marine Biology with Study Abroad, Cornwall

Poster

Investigating the role of citizen science in identifying Antarctic Vulnerable Marine Ecosystems (VMEs)

Antarctic ecosystems, which are highly endemic and fragile, require increased protection from anthropogenic threats. Identification of vulnerability hotspots, termed Vulnerable Marine Ecosystems (VMEs), via assemblages of benthic indicator taxa, is defined as a priority by the United Nations General Assembly. However, VME identification in Antarctica has been limited because the Southern Ocean benthos is highly inaccessible. To try and identify a solution to this knowledge gap, I investigated a novel approach for identifying VMEs, which relies on image data collected by citizen scientists (CS) using their personal devices during Viking expedition submersible trips. In the data analysis, I calculated VME indicator morpho-taxa richness and abundance (derived from percentage cover) per image and assigned a confidence score for each morpho-taxon identification between 1 and 3. I calculated vulnerability indexes per site from the richness and abundance data using a quantitative multi-criteria approach. Vulnerability indexes were compared across sites to determine if variation could be identified. Confidence scores were also compared across morpho-taxa to determine if there were any potential identification biases. The results identified significant variation in vulnerability of both indexes across sites. Damoy Point, Half Moon Island, Pleneau Island and Wordie House sites were identified as having higher relative vulnerability. Confidence values did not vary significantly across morpho-taxa. This shows that CS datasets can be used for scientific analysis and can identify potential VMEs. Although some improvements to data standardisation are required, CS represents a unique opportunity to increase valuable benthic data collection in Antarctica and requires further investigation.

Harvey Gray

2nd Year BSc Mathematics with Year in Industry, Exeter

Presentation

Employment of AI on pure mathematics education

The artificial intelligence sector has been proven on numerous occasions to be a viable way of aiding students' educational experience by serving as a digital personal tutor. Our presentation investigates to what effect ChatGPT can have on pure mathematics education. This presentation investigates ChatGPT's fluency with LEAN. LEAN is an interactive theorem prover that enables mathematical proof to be written and interpreted on a computer. LEAN has been credited to be a breakthrough in the future of pure mathematics education and is gradually being enrolled into the curriculum of mathematics programs at universities. In the initial stages of primary research, we challenge ChatGPT with different pure mathematics problems in the realm of propositional logic, a topic that beginning mathematics undergraduates are introduced to. We then investigate the LEAN solutions it provides and verify their validity. This leads to a firm understanding of ChatGPT's fluency with LEAN, allowing us to understand the challenges that are associated with developing a CustomGPT that will help students write mathematical proof in LEAN. Rigorous development testing is performed on the CustomGPT in the form of flowcharts and written instructions to assess its capability and its limitations. From this process, we conclude to what extent the CustomGPT can act as a digital personal tutor for the students' education in pure mathematics.

Katie Harris

3rd Year BSc Medical Sciences, Exeter

Poster

Co-producing with Netball Players to Develop an Infographic Promoting Pelvic Floor Exercises for Preventing Stress Urinary Incontinence

Uncontrollable urine leakage during high-intensity activities such as sprinting, jumping, and lifting , is often overlooked due to the shame and stigma surrounding the subject.(1) Known as stress urinary incontinence (SUI) this problem is under-reported and under-treated.(1) Despite significant negative impacts on quality of life and athletic performance, there remain common misconceptions that it solely affects older women and post-partum women. This means young women miss out on opportunities to prevent this problem, or they delay accessing professional support.(1) This is potentially harmful to young women's personal and social lives,(2) effects include decreased sport performance, avoidance of exercise and social isolation at a time when rises in obesity mean more women are likely to leak.(1) Yet research shows pelvic floor muscle exercises (PFME) are effective for both preventing and treating SUI.

This project involved focus groups with 8 netball players to co-design an infographic to communicate the importance of pelvic floor health and to encourage all players to integrate routine PFME into warm-up and cool-down regimens. By promoting PFME as a standard component of athletic training with correct information of how to do it, the risk of SUI could be reduced. The netballers also indicated the importance of having an environment where discussions about SUI are normalised and supported by coaches and peers. Ongoing questionnaire evaluation of the infographic will indicate if the netballers can understand and correctly engage their pelvic floor during high-impact sports and know when to seek professional guidance.

(1) Casey EK, Temme K. Pelvic floor muscle function and urinary incontinence in the female athlete. The Physician and Sportsmedicine. 2017b Sep 5;45(4):399–407.

(2) Joseph C, Srivastava K, Ochuba O, Ruo SW, Alkayyali T, Sandhu JK, et al. Stress Urinary Incontinence Among Young Nulliparous Female Athletes. Cureus. 2021 Sep 15;1.

Grace James

3rd Year BA/BSc Geography, Cornwall

Presentation

Climate Change and Cascading Impacts: A Look into Cornwall from a Multi-Hazard Context

The purpose of this dissertation is to evaluate Cornwall's hazard mitigation strategies in relation to the potential for cascading impacts. Cornwall's coastal, social, and economic systems are highly interdependent, making the region vulnerable to a range of hazards, from tsunamis to heatwaves. However, current mitigation policies fail to address Cornwall as a multi-hazard location, overlooking the interconnected risks that could lead to cascading impacts.

Too assess Cornwall's mitigation strategies and multi-hazard risk, this research involved interviews with key stakeholders (17), a public questionnaire (104 responses), and fieldwork in 20 potential multi-hazard locations (10 in person, 10 virtual). This combination of quantitative and qualitative methods was used to gather a holistic view of the physical and the socio-economic impacts of cascading hazards on the local population.

Findings indicate that Cornwall is a multi-hazard location at significant risk of cascading hazards. However, current mitigation strategies do not adequately address these risks. The primary reasons for this are insufficient funding and a lack of coordination between organizations, which often work independently on specific issues and focus predominantly on flooding as the key hazard.

To address these gaps, organizations need to adopt a more collaborative approach and a centralized framework that tackles a range of hazards collectively rather than in isolation. By developing pre-existing projects to analyse multiple hazards, organizations could save money and improve mitigation efforts. The risk of cascading impacts must inform future mitigation plans and decisions to protect communities and provide a model for other regions facing simi-lar multi-hazard risks in a changing climate.

Naabil Khan

4th Year Bachelor of Medicine Bachelor of Surgery, Exeter

Presentation

Skin For All: The role of grassroots initiatives in advancing representation in medical education

Healthcare disparities in dermatology and medical education stem from insufficient representation of skin conditions on skin of colour, leading to misdiagnosis and delayed treatments. A review of medical textbooks revealed that only 18% of images feature non-White skin tones, reflecting a lack of diversity. The Skin For All initiative addresses this gap by creating an online platform promoting inclusive medical education and patient awareness. With input from medical students, professionals, and the public, the resource covers over 30 skin conditions using diverse imagery, accessible language, and tailored content for patients, clinicians, and students.

Since its June 2023 launch, Skin For All has engaged over 4,000 unique users and received 10,000 page visits, earning recognition from major organisations like the BBC and the British Medical Association. Preliminary data indicate improved confidence and diagnostic accuracy among users in recognising conditions across diverse populations. Resources extend beyond dermatology to systemic issues like gonorrhoea and liver cirrhosis, emphasising global public health relevance. The platform includes diverse clinical descriptions, diagrams, and a timeline of racism in medicine.

Aligned with the NHS Long Term Plan's equity goals, Skin For All fosters systemic change through inclusive curricula and accessible resources. It exemplifies grassroots efforts to address healthcare inequities. Future plans include expanding reach, forging partnerships, and longitudinal assessments to evaluate its impact on education and patient care, underscoring the importance of representation in improving outcomes for all, within the undergraduate research and clinical communities.

Indigo Pai-Gibson

3rd Year MSci Zoology, Cornwall

Presentation

Better Together: Bacterial Anti-Plasmid Immune Synergy and its Implications for Antimicrobial Resistance

Antimicrobial-resistant bacteria are one of the greatest threats to global human health. Plasmids (selfish, transferable, circular DNA) can spread antimicrobial resistance genes between bacteria. Equally, bacterial anti-plasmid immune defences can limit this spread by modulating how many plasmids a bacterium has. Certain anti-plasmid defences often co-localise in bacterial genomes, suggesting they may act synergistically. Yet, anti-plasmid defences and their synergy remain vastly understudied, despite their importance in understanding patterns of antimicrobial resistance. This study investigates the level of anti-plasmid immunity conferred by two commonly co-localised defence systems - Defence-1 and Defence-2 - when operating alone and together in the priority pathogen, Pseudomonas aeruginosa. Challenging P.aeruginosa with plasmids revealed Defence-1 prevented P.aeruginosa from acquiring plasmids from the environment (plasmid transformation immunity), whereas Defence-2 did not affect transformation immunity. In contrast, Defence-1 and Defence-2 acted synergistically when removing established plasmids from P.aeruginosa (plasmid maintenance immunity). These results lend support to recent literature on these defences' different plasmid recognition mechanisms. Defence-1 identifies plasmids through loop extrusion; thus, Defence-1 can confer defence in short time frames like during transformation. Defence-2 is speculated to require guide molecules to recognise plasmids; thus, Defence-2 may require longer time frames to confer anti-plasmid immunity like during plasmid maintenance. This work partially explains the evolutionary drivers behind patterns of antibiotic resistance spread and these defences' co-localisation in P.aeruginosa. This prompts further study on the mechanisms and limitations of Defence-1-Defence-2 synergy, as well as how best to integrate this research into clinical infection management.

Pouria Sadeghian

3rd Year BSc Medical Sciences, Exeter

Presentation

Improving Healthcare & Quality of Life in Young Patients with Mesenteric artery Syndrome: Patient-Centred approach

Superior Mesenteric Artery Syndrome (SMAS) is a rare condition in which the superior mesenteric artery compresses the third part of the duodenum, leading to symptoms such as nausea, vomiting, and abdominal pain. It primarily affects young individuals, especially women, and is commonly associated with significant weight loss. The condition is difficult to diagnose due to its rarity and overlap with other gastrointestinal disorders, and early intervention is crucial to prevent complications like malnutrition and dehydration.

A patient-centred approach could significantly improve the healthcare experience for those with SMAS, particularly in young patients, by addressing not only physical symptoms but also mental, emotional, and social challenges. The case study of Ella, a 20-year-old diagnosed with SMAS, highlights the difficulties of delayed diagnosis and treatment, which led to isolation and mental health struggles. Her treatment journey was complicated by her obsessive-compulsive disorder (OCD), which added additional layers of stress and anxiety. Involving patients in their diagnosis and treatment decisions helps to improve outcomes by ensuring that their perspectives and needs are considered.

Social prescribing, a non-clinical intervention connecting patients to community-based support, may offer additional benefits, particularly in managing weight and improving mental health. However, more research is needed to determine its effectiveness for SMAS patients. Overall, integrating a holistic, patient-centred approach alongside medical interventions could enhance the quality of life for young people with superior mesenteric artery syndrome by addressing both the physical and psychosocial aspects of the condition.

Elizabeth Sears

4th Year BSc Medical Sciences with Professional Training Year, Exeter

Poster

Establishing a STAT3 knockout pancreatic cell line using CRISPR-Cas9 gene editing technology to investigate the role of STAT3 in pancreatic cancer

Pancreatic ductal adenocarcinoma (PDAC) is a highly lethal cancer with a 10-year survival rate below 5%. Most cases occur sporadically, making prediction and early diagnosis difficult and by the time PDAC is detected, it is often too advanced for surgical intervention. This study aimed to investigate the role of Signal Transducer and Activator of Transcription 3 (STAT3) in PDAC. STAT3 is abnormally activated in up to 70% of cancers, but its role in PDAC remains controversial, with reports suggesting both pathogenic and protective functions.

To explore this, PANC-1 cells, a widely used PDAC model, were transfected with STAT3 knockout (KO) plasmids using the CRISPR/Cas9 system. However, generating a STAT3 KO cell line was unsuccessful, prompting further investigation. Western blotting revealed an increased amount of total STAT3 protein in the PANC-1 cells and a luciferase assay revealed that PANC-1 cells exhibit significantly higher baseline STAT3 activity than controls, suggesting a strong dependence on STAT3 signalling. Interestingly, PANC-1 cells also displayed a reduced response to interleukin-6 (IL-6) stimulation compared to control cells.

Cell death analysis of CRISPR-transfected PANC-1 cells versus an empty vector (EV) control showed no significant difference, leaving the reason for the failed KO unclear. Further studies should explore alternative transfection methods, among other strategies to establish a successful STAT3 KO model.

Ismail Ahmad Shaikh

2nd Year Bachelor of Medicine Bachelor of Surgery, Truro

Presentation

From Stress to Serenity: The Wild Ride of Premenstrual Syndrome and the Healing Power of Nature

Premenstrual Syndrome (PMS) is a cluster of physical, psychological and behavioral symptoms affecting a significant number (20-98%) of females of reproductive age; emerging 7-10 days before menstruation, in the luteal phase of the menstrual cycle and remitting on the onset of menstruation or soon after. Although its aetiology remains largely unknown, links have been established with changes in hormonal sensitivity and concentrations, neurotransmitter dysregulation, and alterations in the Renin–Angiotensin–Aldosterone system. Symptoms such as headaches, fatigue, 'brain fog', mastodynia, cognitive impairments like anxiety, among others; severely impacting women's quality of life along with social and functional impairments, with estimates suggesting that 18% experience debilitating symptoms. Addressing PMS is of utmost importance, as it deepens gender inequality, consequently increasing the likelihood of burnout in females.

This study highlights the healing power of natural environments as a potential intervention for alleviating PMS symptoms. Evidence indicates that spending at least 120 minutes per week in nature can significantly help with physical, psychological and behavioral symptoms, while enhancing cognitive function and emotional resilience. Mindful engagement with nature may serve as a supportive strategy for women coping with PMS, fostering both physical and mental health improvements. Therefore, incorporating time in natural settings into daily routines may enhance life quality for those impacted by PMS. This study was done while having United Nations Sustainable Development Goals 3 and 5 in mind.

Kacey St John

4th Year BSc Zoology with Professional Placement, Cornwall

Presentation

Feeling the heat? Investigating the Impacts of Incubation Temperature on Leatherback Sea Turtles

As an ectothermic species which relies on the coastal environment for reproduction, sea turtles are particularly sensitive to climate change. Not only are nests at risk from rising sea levels and destruction from cyclones, but rising temperatures also challenge their thermo-dependent incubation. Whilst fine-scaled adaptive variation in heat-tolerance has been investigated and debated in a handful of literature, these are limited in location and species, highlighting a need for novel case studies. This study aims to investigate the role temperature plays in nest success of underrepresented leatherback sea turtles (Dermochelys coriacea) in an understudied location in the Eastern Caribbean, using hatchling morphometrics as an additional proxy. Temperature profiles, excavation results and morphometrics were recorded and analysed from 12 relocated nests in the Rosalie Bay Hatchery. Initial results suggest that whilst incubation duration is significantly shortened as temperature increases, this does not have an impact on overall hatch success. However, it was found that nests which spend time above the suspected lethal limit of 33C have higher success than those that didn't; suggesting a potential adaptive tolerance to naturally hotter conditions (black, volcanic sand) than other case studies. Preliminary findings also suggest that for this case, the temperature average and consistency of the first trimester of incubation is most crucial to nest success, with both hatch success and hatchling size decreasing with hotter and less stable conditions. These findings could have wider implications for nest management both locally and regionally, providing knowledge for potential mitigation techniques against predicted global warming.

Charlie Stanbrook

4th Year BA English and Modern Languages, Exeter

Presentation

Implicit Metadata for Studying Early Modern Texts

Behind every work there is a context, sometimes explicit in its references but more often than not implicit in its word choices. This is particularly the case with early modern texts which rest on the background of a societal make-up removed from our own, such as the medical system of bodily humours. This is what I call implicit metadata, impossible to extract and discount as important, and necessary to create a full comprehension of the text. Whilst there is an argument that the artist can be separated from the art, I will argue that this implicit metadate cannot. This presentation will aim to show how by looking at medical theory, prevailing philosophies and other source texts a deeper understanding of a text can be found. It will focus specifically on two French works, Jean-Jacques Bouchard's Confessions and François Maynard's poems with an exploration of how this method can be used in both English and French texts from the 16th and 17th centuries. In turn this will allow us to examine texts from different time periods and cultures and shine new light on the way we view and research historical periods.

Isabelle Trubshaw

4th Year BA Philosophy and Modern Languages, Exeter

Presentation

Can reality ever be conceptualised objectively, or is it subject to construal?

Traditionally, formal semanticists viewed language as a denotation device to represent objective realities. However, more recent theorists argue that meaning arises directly from our sensory, embodied, and cultural experiences, which make up our vast repository of knowledge about the world. In this way, meaning behind words is “encyclopaedic” and inherently understood within a particular context. In this paper, I adopt the latter perspective positing that reality is subject to interpretation by virtue of higher order cognitive skills called “construal operations”. To illustrate this, I will analyse two recent conflicting opinion pieces on the topic of Medically Assisted Procreation (MAR) in France. Through analysis of three construal operations—framing, perspective, and metaphor—the study demonstrates how linguistic choices actively shape readers' interpretations of MAR. The analysis reveals how these cognitive mechanisms are deliberately employed to present contrasting conceptualisations of the same phenomenon, supporting the view that linguistic meaning is inherently interpretive rather than objective.

Ryan Whitehead

3rd Year BSc Politics and International Relations, Exeter

Poster

The Electoral Limits of Levelling Up: Clientelism and the Conservative Vote Share in 2024

This research examines the impact of the Conservative Party's Levelling Up agenda on their vote share in the 2024 General Election, using clientelism as a theoretical framework. Levelling up was the Conservative's flagship policy aimed at addressing regional economic and social disparities, with the intention of directing significant public investment towards historically 'left-behind' and underfunded areas. This research employs a quantitative approach, analysing constituency-level data and funding allocations to understand if the

Preliminary findings suggest that higher levels of Levelling Up funding did not translate into electoral gains for the Conservative Party. In fact, constituencies that received more investment were more likely to see a decline in Conservative support compared to the national average. This challenges the assumption that targeted public spending secures voter loyalty and raises questions about how voters perceived the effectiveness and intent behind the Levelling Up agenda. The preliminary results indicate that while economic investment may be a key political tool, it does not necessarily function as an electoral strategy, particularly in contexts where other political and economic factors dominate voter decision-making.

By analysing the relationship between government spending and electoral outcomes, this study contributes to the broader literature on clientelism and distributive politics in advanced democracies. It highlights the limitations of state-led investment as a mechanism of political support and provides insights into the complexities of voter behaviour in the UK's evolving political landscape.

Ruichen Yin

3rd Year BSc Psychology, Exeter

Presentation

Meditation and Wellbeing, Does Context Matter? A Randomised Experiment Comparing Virtual Green Space, Blue Space and Urban Environments

Common mental health conditions, including depressive and anxiety disorders, are leading contributors to the global health-related burden. To counter this, there is increasing emphasis on prevention strategies, one of which, with promise is using nature-based interventions (NBIs). This study, as part of a group project, investigates the effects of virtual exposure to green and blue spaces on stress, rumination and mental wellbeing compared to an urban space. The above metrics are selected because they are known to be predictors of common mental health disorders. Based on existing literature, we hypothesize that virtual NBIs will result in significant reduction in stress and rumination, and improvement in wellbeing, compared to the urban control, with no differences between green and blue spaces. Participants will be randomly assigned to watch a video of walking through a woodland, on a beach or in a London underground passage, all accompanied by an auditory guided-meditation. Participants will report outcome measures before and after the intervention, and at a two weeks follow-up to assess for any sustained effects. A 3 (green vs blue vs urban) × 2 (before vs after) mixed measures ANOVA will be used to examine group differences over time. If the findings are consistent with our hypothesis, this will offer additional support for the efficacy of virtual NBIs and their potential integration into digital self-help interventions. This research could inform the development of prevention methods, particularly for urban populations with limited access to natural environments.