



Waynflete Presentation Evening - Round One - 6.30pm

Simon Brooks: An economic and environmental analysis of Bike Sharing Schemes

Over the last decade, Bike Sharing Schemes (BSS) have surged in popularity due to their eco-friendly image. In this project, I estimate the environmental impacts of these schemes. The results are bleak. I consider the limited success of BSS in replacing carbon-intensive forms of transport and explore several barriers that prevent BSS from achieving high usage rates.

Theo Furniss: 'An Operation, not an Aberration': My Lai and US war crimes in East Asia

The My Lai Massacre - the murder of up to 500 unarmed civilians by US armed forces during the Vietnam War - has often been looked upon as an isolated incident of brutality. This project, however, conclusively affirms that this is not the case. I have undertaken wide-ranging historical research in order to prove that actions undertaken by the US army at My Lai were part of a broader pattern of callous disregard for civilian life, rooted in institutional racism, that came to define the US's engagements in East Asia in the late 20th century.

Josie Hodgson: Are refugee camps creating a new generation of Islamic extremists?

Can Western presuppositions that Middle Eastern refugee camps increase radicalisation be justified? Whilst refugee camps are intended solutions to temporary dislocation, many refugees have been living within their host countries for decades - paving the way towards many camps worldwide developing into states of stagnation. Throughout my project, I explore the conditions of camps and their psychological effects, the refugee individuals and their increased vulnerability to radicalisation, and finally, the role of orientalism.

Emma Klenerman: Could genetically editing insects be the key to disease control?

Malaria is a medical field which has so far not been tackled with much success, but could this change with the introduction of genetic modification and CRISPR, which can be used to control the mosquito populations? My project explores the necessity of and possibilities within widespread genetic editing, as well as the potential biological and ethical consequences of these.



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Alessia Laird: Reshaping myths to allow Homeric women to be heroes of their own stories.

With a focus on three 21st century novels, *Circe* by Madeline Miller, *The Silence of the Girls* by Pat Barker, and *A Thousand Ships* by Natalie Haynes, this project examines how contemporary writers have retold classical myths and found new heroes in Homer's overlooked women. Each writer has rewritten and reshaped these ancient stories and found new significance in them for the modern world.

Marielle Lee: Honeybees as a superorganism: are there lessons for human society?

Honeybees are studied time and time again for their unique societal structure in which workers, drones and a single queen collaborate to maintain the colony. I will discuss the mechanisms of honeybee cooperation which result in the species exhibiting eusociality, and if there are strategies applicable to humans, particularly in respect to decision making.

John Lucas: To what extent will LEDs replace existing lighting technologies?

High-intensity LED lighting is a technology which, over the last decade has been developed to reach such a high efficiency that it can now provide a feasible high-efficiency alternative to most conventional light sources used in homes and businesses. I outline the principle of operation of LEDs, in comparison with that of current lighting technologies, and how LEDs can be implemented to provide high-intensity household/corporate illumination. I also explore the problems facing the widespread adoption of LED lighting and the certain limited applications for which LED lights cannot suitably replace conventional technologies.



Waynflete Presentation Evening - Round Two – 7.00pm

Oyinda Bello: The Effects of the Korean Wave: A question of Wealth or Wellbeing?

The Korean Wave describes the rise in South Korea's entertainment industry, and broader cultural exports, like food and cosmetic surgery tourism. This government-backed venture has contributed to transitioning South Korea from absolute poverty as a third world country, to being one of the leading global economies in under 50 years. Yet, I aim to uncover the hidden, social impacts of the Korean Wave on the South Korean population, and question what's more important: wealth, or wellbeing.

Rosa Birchenough: Could bilingualism be a pre-emptive treatment for Alzheimer's Disease?

Alzheimer's Disease affects 35 million people around the world, yet there is no cure. This project investigates how bilingualism interacts with the brain, and tackles the concept of cognitive reserve. It looks at whether Bilingualism could affect the onset of Alzheimer's, and it is analysed as a potential treatment. I try to outline the requirements for bilingualism to be a treatment, and the ways in which it could be used to relieve pressure on the NHS in the future

Hannah Cox: Applications of LASER technology in modelling exoplanet interiors

Exoplanetary science is a new and rapidly expanding area of research. With some exoplanets being tens of times as massive as Earth, extreme pressures and temperatures are reached in their cores. This project explores how lasers and other technologies can be used to better understand the behaviour of materials under these conditions, by both replicating the conditions and imaging substances under them.

Stani Huepfl: The Arab–Israeli conflict and the United States

Is the Arab–Israeli conflict truly unresolvable? This project deals with questions at the heart of Middle Eastern conflict, and discusses the role of the United States as a mediator between Israel and its neighbours. Drawing upon the 2014 Gaza Conflict as a case study, I ask why the U. S. Congress was so supportive of Israel, despite strong evidence of war crimes by both sides. This project reassesses the U.S.–Israel relationship going forward, seeking to combine support for Israel's security and flourishing with greater accountability in conflict.



Waynflete Presentation Evening - Round Two – 7.00pm

Laurie Macfarlane: How can the presentation & creation of controversial material differ between theatre & film

Controversial material has been inherent in the arts throughout history, having been controversial for a number of reasons - often centering around violence, sexuality, or the subversion or disrespect of authority. I examine three stories - King Lear, The Laramie Project, and Equus - and assess the differences in the impact of their retellings in the mediums of theatre and film.

Victoria Phillips: Periodontitis and Type II Diabetes; a bidirectional relationship?

Periodontitis and Type II Diabetes are both highly prevalent diseases which pose complex challenges to research and healthcare. Periodontitis is officially now the 6th complication of T2DM. The connection between the two diseases involves many complex mechanisms and pathways which, in turn, exacerbate each other. This project explores the common pathogenesis, effect of glycaemic control, insulin resistance, inflammation and the role of treatment and the dental and medical teams in the progression of the diseases.

Maria Zhang: Life vs Profit: Intellectual Property Rights in the U.S. healthcare system

As the COVID-19 crisis highlights the detrimental extent of the lack of affordable healthcare in the U.S., I will explain why, by examining its patent system which enables shocking price increases for life-saving and everyday drugs. Having explored the justifications for patents and the methods of how they are manipulated, this project calls for specific reforms by the American government of both the patent and healthcare system for the protection of fundamental human rights.



Waynflete Presentation Evening - Round Three - 7.30pm

Rhys Davies: The linguistic differences between Basque and other European languages

The Basque region, containing major cities such as Bilbao and San Sebastián, is not obviously cut off from the rest of Europe. Yet its language bears absolutely no relation to anything else in the world. In my project, I examine the various theories for why this is, ranging from the Basques migrating from Georgia, to coming to Europe at the end of the last ice age.

Sophia Geaney: Are we overdiagnosing depression? An evolutionary perspective

Depression is regarded as a significant public health problem but is normal sadness being inappropriately medicalised? I take an evolutionary perspective to consider the normal experience of low mood and its precipitants, the historical and recent conceptions of low mood and depression, and findings on the genetic and environmental causes of depression.

Amy Gibbon: Challenges of computer modelling fusion plasma

Computer modelling is an essential tool in aiding our understanding and accelerating the research of fusion plasmas. I explain the context of nuclear fusion and how it stands to shape the future of energy, outline what challenges modellers face, and explore both the fluid and kinetic branches of modelling and their flaws. However, despite (and perhaps because of) the complexity of plasma, insufficient computer power and underfunding may be most responsible for the downfall of current computer models.

Charlie Litchfield: London's over-dominance and regional inequality.

Does London detract from the growth of the rest of the country? How does this affect regional inequality? This projects shows that London is an over-dominant city and this results in higher levels of regional inequality. This is demonstrated by investigating other countries as well as specific circumstances in the UK. I look at how to combat regional inequality with a focus on encouraging growth rather than restricting it elsewhere.



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Polly Wilson: Conflict & Female Emancipation in the Middle East

The intersection between female liberation and conflict is a unique phenomenon observed throughout the 20th century. In my project I analyse this notion through Palestinian women and their role in the First Intifada. I explore how Palestinian awareness of national emancipation in the context of immediate conflict, within a deeply patriarchal Middle-Eastern society, directly impacted the emancipation of women. I will examine the extent to which female liberation was facilitated by the Intifada and the wider correlation between conflict and emancipation.