

Let's Talk About [X]

Day Two: Thursday 11 Feb
Boyd Orr Lecture Theatre 1

1: Andrew Struan & Scott Ramsay
Talking about talking about [X]
Keynote presentation

tba

2: Bibi Schwital
Let's talk about sex, baby

Gender identity has become increasingly visible as a topic in mainstream media in the past few years. From movie plots to celebrities, transgender identities are treated less like something shameful, and more like a novelty. Yet transgender and non-binary people still face a lot of discrimination on a day-to-day basis, from relatively small incidents to extreme violence. A large part of this discrimination does not come from people who wish to do harm, but from people who lack the knowledge or confidence to not be rude or offensive. This can only be changed through education. This talk is aimed at making theories of sex and gender easily accessible, while giving people the necessary knowledge and confidence to further explore the topic on their own and learn from transgender individuals without offending. We will look at theories of sex and gender through the lens of individual experiences from transgender and non-binary people. At the foundation of the talk is the argument that there is no such thing as 'biological sex', disregarding the idea that gender is a social construct, and sex is not. We will then look at what it would mean for society if we adopted this stance towards gender and sex, and how this would be beneficial for everyone.

3: Dan Slack
Antibiotic resistance

The problem of antibiotic resistance is well documented, and at the current rate, we could run out of antibiotics in the next 30 years. This would catapult us back to days of extremely high mortality during childbirth and routine surgery, and would make a common chest infection life-threatening. This problem affects everyone, and will completely change the landscape of medicine and society in general. However, there are small things people can do to help. Awareness is key, as the resistance problem has largely been created by society. Misuse of antibiotics has placed selective pressure on bacteria, which in turn has led them to evolve into multidrug resistant strains. Misuse involves giving antibiotics for viral infections, not finishing a course of antibiotics and patients placing pressure on physicians for a 'quick fix'. Each of these has contributed to changes in the genetic information of bacteria, which is what governs susceptibility to antimicrobial drugs. My research focused on specific molecules called bacteriocins, produced in this case by *Streptococcus pneumoniae*, the leading cause of pneumonia. Bacteriocins could potentially replace antibiotics down the line. They are small proteins that bacteria use to kill other bacteria, and are far more potent and specific than conventional antibiotics, so resistance is less likely to develop.

4: Ross McFarlane
Emotions and rationality

Why might we want to learn more about our emotions? To maintain a healthy mental life, or for healthy relationships with others. How about for healthy research? For many within the research community our emotions are seen as hurdles to overcome on the way to a rationally reasoned truth. However, when we break down the traditional model of rational reasoning, there appears to be an important step missing. I intend to show that it is essential to a full understanding of logical decision making that some explanation of our ability to focus attention on rationally appealing options and values is offered. The solution I present is that our emotions are the only non-arbitrary means to distinguish between legitimate and ridiculous options, and so that if we intend to reason correctly and understand what it means to reason rationally, then we must spend more time studying the often maligned subject of rational emotions.

5: Simone Farrer
Law and technology: a race

"Slow and steady wins the race." Not always.

Television and broadcast industries are rife with emerging technologies, revolutionising the way we consume audiovisual content. Once we sat around black-and-white boxes, now we can watch television via a mobile phone. Anytime, anywhere is the way to watch. This has huge ramifications beyond convenience; it is not so convenient for the slow movements of law. Many businesses are engaging in tactics to improve viewership: regulating these is incredibly complex. Video-on-demand is one of a number of emerging technologies which are disrupting the television and broadcasting industries, posing challenges for regulators and law-makers.

7: Julien Bodart
Surging glaciers

What forms a glacier? What are the processes behind them? Why are they important? How does climate change impact on them? These questions have been the focus of scientists for decades and are becoming increasingly important in the light of human-induced climate change. More interestingly, the starting point of my research was to explore the differences between various types of glaciers. For example, surging glaciers will behave very differently from other glaciers in the way they flow and develop. Surging glaciers have always fascinated glaciologists as a result of their complex processes, which, to this day, are still fairly unknown. This makes an interesting case for researchers to investigate further this type of glacier, which fluctuates between long periods of slow-moving ice and short periods of rapid flow motion. Part of my undergraduate research project is to look at a series of satellite images from 1970-2015 using Geographic Information System (GIS) to identify past and present surges and to estimate their impact on individual glaciers. My presentation will make use of visual images such as space-born imagery as well as various animations to illustrate these fascinating ice bodies. The main aims of my talk will be to familiarise the general public with glaciers, raise awareness of the global threats affecting them and take the opportunity to introduce surging glaciers and highlight their key processes.

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7: Bethany Garry

Battle of Karbala: effect on Islam and politics

Karbala was a battle in 680 AD but has massive continued significance for Shia Muslims around the world today. It is remembered every year in the Muslim month of Muharram, and forms how Shia Muslims consider their own identity. Karbala is a story of epic proportions, good battling evil, and a tale of how the good guys don't always win and emphasizing the high stakes of morality. Karbala happened, but in many ways, the 'truth' doesn't matter; what matters is what people believe happened.

My research focuses on the significance of Karbala to Iranian history and politics, and how the story of Karbala was used in the struggle against the Shah in the Islamic Revolution. Research in Religious Studies investigates how religion affects people's lives and worlds. Therefore, investigating how the story of Karbala affected how Iranians thought about politics means we can better understand how religion motivates people.

8: Paige Barclay

Terrorism in the media

2015 reignited debate on whether a 'West versus the rest' divide exists in terms of public interest and outrage over terrorism and its victims. Kicking off in January with the Charlie Hebdo and Baga attacks, and following through to the Paris and Beirut attacks in November, social media users and columnists offered up a plethora of opinions on whether coverage was balanced or not, and why. While this debate has largely been positive in encouraging public inquiry into the representation of terrorism in news media, few - if any - of the arguments were grounded in actual evidence.

In its comparison of the quantity and quality of media coverage of the Charlie Hebdo and Baga attacks in January 2015, sampled from twelve newspapers across six countries, my research sought to contribute a concrete answer to this debate. To do so, it asks two key questions. First, did the Charlie Hebdo attack receive greater media coverage than the Baga attack? Second, did this coverage differ based on the location of news outlets in relation to either attack?

9: Peter Sumner

Scottish Hydra & invasive species

The group of animals known as Hydra have been exceptionally useful study organisms for a variety of life sciences including developmental biology, zoology and embryology. They are closely related to corals, the ecosystem engineers responsible for supporting over 25% of our ocean's biodiversity. As climate change begins to erode and irreparably damage these vital ecosystems, scientists must find a way to experimentally protect these animals.

Due to many coral species being listed as endangered, experiments on artificially exposing them to potentially dangerous environmental conditions are rare. It is, therefore, vital to find a suitable proxy for exploring these pathways, in the hopes of preventing further damage to these miraculous marine environments.

10: Sarah Bacom

Climate street art

Presently, it is virtually irrefutable that a scientific consensus prevails on the matter of climate change; yet a social consensus on climate change does not exist. In response to this, a number of contemporary artists are demonstrating their opposition to climate change by crafting climate street art: art depicting the causes, reactions, realities, and futures of climate change in a public space.

My research demonstrates climate street art's powerful ability to act as a force of opposition to climate change, and reveals what makes climate street art so successful: its ability to provide its viewers with the inspiration to wield those forces that are rudimentary to the essence of what humankind will become as a species. Although rhetoric surrounding climate change is generally specialised, a primary component of climate street art is its accessibility; thereby, an analysis of it offers the same element only requiring visuals to provide an explanation.

11: Jack Stewart

Reforestation with aerial darts

My project examines the concept of 'aerial darts' for the purpose of replanting forests. Forests are an incredibly important part of Earth's ecosystem. Perhaps most importantly, forests play a major role in regulating global climate. Yet, on average, 200 km² of forest are destroyed worldwide every single day. There is a growing need for technological advances in techniques of planting forests on a massive scale. These 'darts' contain a tree sapling encapsulated by a biodegradable container which is designed to penetrate the ground after being dropped from a height. These darts are dropped by the thousands from an aircraft, allowing for fast and widespread planting of forests. Aerodynamic analysis of these darts was conducted to examine the most suitable design that is optimised for flight stability. Flight stability is crucial for the success of planting operations because it ensures each dart will land nose-first and can also allow for accurate and predictable dissemination of darts. Both wind tunnel testing and CFD simulation methods were utilized to this end. Aerial darts are a promising concept, but additional, multidisciplinary research should be conducted to further understanding of their practical usage.

12: Luca Rosalia

Cancer: when our DNA goes wrong

Cancer affects 1 in 3 individuals and extensive research has been carried out aiming at more accurate diagnoses and more efficient treatments. But what is cancer? What really causes cancer? And what is current research trying to achieve? To answer all these questions it is necessary to go back in time to Ancient Egypt when the first cancers were documented. However, it is by looking at the achievement of science in the 20th century that we can understand the role that DNA plays in understanding cancer biology and improve the treatments. The main focus of the research I took part into was to identify genetic mutations which are often found in cancerous colorectal cells, and to compare the transcriptome of cancerous thyroid cells with that of normal cells, by using new generation technologies such as Ion Torrent Sequencing Technology and microarrays. Identifying driver mutations would let us tailor treatment to the individual cancer type, and provide with a more accurate prognosis which would reduce side effects. Cancer Genomics really has the potential to make personalised therapy a reality and that is perhaps one of the biggest challenges of the 21st century.