



MCR/SCR RESEARCH DAY
Robinson College

Thank you for joining us!



What could we do better?

Did you enjoy our MCR/SCR Research Day? We would love to hear your feedback!

Thank you for taking your time to attend our events and your feedback is much appreciated!

Sat 3rd May 2025

Crausaz Wordsworth Building



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Anoushka Rao

MPhil student, Health, Medicine and Society

Dead With a Heartbeat: Investigating Physician-Family Miscommunication during Conversations of Death by Neurological Criteria

Through investigating the linguistic underpinnings of the brain death/death by neurological criteria (BD/DNC) conversation, this study aims to ameliorate and potentially mitigate the emotional, legal, and structural fallout resulting from ineffective communication BD/DNC status by physicians to surrogate decision makers. In the past few decades, many lawsuits have resulted from physicians ambiguously or ineffectively communicating to a family that their loved one is dead, leading to the family’s refusal to allow the disconnection of mechanical ventilation and suing hospitals that insist on doing so. These cases have a significant public health impact, as they place a burden on doctors and jeopardize trust in health systems, since continuing ventilatory support on a deceased patient and engaging in legal proceedings may shift medical resources away from critically ill patients. Current research has not fully established the most optimal phrases physicians use to communicate BD/DNC, nor has there been validation of these phrases having favourable outcomes in a family’s understanding and trust in physicians. An in-depth analysis of leading physicians’ perspectives and tactics used during these conversations would fill an essential gap in the literature and promote greater concordance an understanding within the fields of neurocritical care medicine. This study seeks to answer the following questions: How do physicians approach the death by neurological criteria (DNC) conversation? What are convergences and divergences in how these conversations are structured, and how can these differences be reconciled to develop best practices for training physicians?



Okam Miracle

MPhil Student, Archaeological Science

Crafting Complexity: Chemical Analysis of Igbo-Ukwu Pottery from Nigeria

Igbo-Ukwu, a 9th-13th-century site in southeastern Nigeria, has been described as the most iconic archaeological discovery in West Africa since World War II and has yielded a unique assemblage of bronze and iron objects, ceramics, bones, textiles, beads, and ivory. Little is known about the ceramics from the site, and a chronology or ceramic template does not exist in the region. This has limited chronology and comparative study of ceramics from the site, and an understanding of the relationship between humans and technology is sparse. This research examines craft production, choices, and organisation in Igbo-Ukwu using ceramics and scientific techniques. Ninety-five ceramic sherds from the recent excavation are used in this study. The ceramic fabric composition (temper, inclusions, and clay), firing temperature, vitrification point, and nature of surface decoration will be analysed using portable X-ray fluorescence (pXRF), Scanning Electron Microscopy (SEM), and optical microscopy. Combining these methods will help identify and classify cultural patterns, temporal variety, and technological changes in Igbo-Ukwu and exchange networks between Igbo-Ukwu and other parts of the world. This will also create a ceramic reference for future research in southeastern Nigeria and beyond.

Programme Schedule

9:30 – 10:00	Arrival and refreshment
10:00	Welcome (Zihan Ni, Academic Affairs Officer)
10:00 – 10:30	Professor Peter Bossaerts
10:30 – 10:50	Dr Orsolya Katalin Petőcz
10:50 – 11:10	Ben Palmer-Welch
11:10 – 11:40	Break with refreshments
11:40 – 12:00	Stefany Kissovsky
12:00 – 12:30	Okam Miracle
12:30 – 12:50	Anoushka Rao
12:50 – 13:50	Lunch



Professor Peter Bossaerts

Faculty of Economics

How Smart do Smart Drugs Make you?

How efficient are popular pharmaceutical cognitive enhancers ("smart drugs") in everyday complex tasks? Using the knapsack optimisation problem (an "NP hard problem") as a stylised representation of such tasks, the talk discusses results from a within-subject clinical trial using methylphenidate (Ritalin, Concerta, ...), dextroamphetamine (Dexedrine, Adderall, ...), and modafinil (Provigil). Comparison will be made with performance in tasks that in principle require little cognitive effort, such as multi-armed bandit gambling.

Stefany Kissovsky

3rd Year PhD Student, Chemical Engineering and Biotechnology

Advancing Alzheimer's Diagnostics with On-chip Calibration of Organic Electrochemical Transistor Biosensors

Alzheimer's disease is a progressive neurodegenerative disorder that currently affects over 50 million people worldwide, a number expected to triple by 2050. Although its underlying mechanisms remain poorly understood, the condition is associated with the misregulation of specific biochemical markers. Detecting these biomarkers is challenging due to their extremely low (sub-nanomolar) concentrations, often requiring specialised equipment, technical expertise, and lengthy procedures. These requirements were addressed using organic electrochemical transistors (OECTs), which are biocompatible and offer high signal amplification at low operating voltages. We designed, microfabricated, and systematically tested a range of OECT configurations to enable real-time calibration of signal drifts and achieve stable, high-sensitivity operation in aqueous environments. To further enhance sensitivity, more than ten enzyme immobilisation protocols were evaluated to ensure effective and stable attachment of the recognition element—an enzyme—onto the biosensor's gate electrode. The system was validated in real time using various target analytes relevant to Alzheimer's pathology. This work demonstrates a robust and sensitive platform for detecting low-concentration biomarkers, outlining a promising route toward more accessible, rapid, and reliable in-vitro methods to advance Alzheimer's research and early diagnostics.



Ben Palmer-Welch

MPhil Student, Theoretical and Applied Linguistics

Trusted Turncoats: Loyalty in Medieval Japan

Language loss is a debilitating consequence of stroke and principled understanding of its manifestations is critical for improving the quality-of-life of stroke survivors. Each year in the UK, over 55,500 new people are diagnosed with aphasia (NHS England, 2021–2024), and despite recent developments in treatment options, rehabilitative outcomes remain alarmingly inconsistent. This project seeks to combat these issues, by leveraging cutting-edge neo-emergentist acquisition theory (e.g. Biberauer's (2019, et seq.) *Maximise Minimal Means* model) to treat aphasic grammars as (at least partially) systematic and principled grammatical systems in their own right, exhibiting predictable and readily explicable patterns of re-emergence and elaboration. The project focusses on *Wh*-question formation (Chomsky, 1977; 1986; 1993), specifically mapping asymmetries in the rehabilitation trajectories of *wh*-arguments (e.g., *who*, *what*) and *wh*-adjuncts (e.g., *when*, *where*), to better understand the influence of inter-individual differences between baseline grammars in predicting non-convergent rehabilitative outcomes. Ultimately, this research forms the foundation for upcoming doctoral research leveraging the intrinsic mechanisms of grammatical (re-)organisation in non-fluent aphasia to inform novel optimised protocols for individualised, targeted diagnostics and therapeutic intervention.

Dr Orsolya Katalin Petőcz

Faculty of Modern and Medieval Languages and Linguistics

The Age of the Queer Witness: Holocaust Testimonies across National Borders

The Holocaust and sexuality have long formed a controversial, if not taboo, pair, resulting in decades of silence surrounding the existence and persecution of non-cisheteronormative people during the Holocaust. Queer Holocaust survivors have had to counteract cemented homophobic myths and a long-present silence about the sexuality-related persecution before and during World War II. Those deported for their sexuality were often called 'pink triangles' for their insignia in the camps, notably following the publication of *Die Männer mit dem rosa Winkel* [*The Men with the Pink Triangle*] (1972), the testimony of Austrian 'pink triangle' survivor Josef Kohout, that had an impact on activists, historians and survivors. It catalysed what I call the 'age of the queer witness': the rising visibility of queer testimonies to the Holocaust. In this talk, I trace the impact of Kohout's testimony in France through a focus on the life and work of Alsace-born Pierre Seel, survivor of the Schirmeck-Vorbrück concentration camp. He started speaking publicly about his deportation after forty years of silence, and credited the development of his witness persona to Kohout's testimony. Through a study of previously unseen interviews and personal letters by Seel, I trace a thread of influence between testimonies. I put emphasis on the risks pertaining to the idealisation of public visibility, and to the fetishisation of Holocaust survivors.