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Norah Boyce Science Lectures - Science for Everyone: Autumn term 2025

These weekly lectures will take place on Tuesdays at 4.30 pm online via Zoom.

The lectures are open to members only. The link for each lecture is on the Norah Boyce Lectures page of the website (you will need to log in to access this) and will be included in the weekly Bulletin during the week prior to the lecture and also emailed to Bulletin recipients on the morning of the Lecture.

Any last-minute changes to the programme will be publicised in the weekly Bulletin.

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14 October — Will machine learning-based diagnosis of clinical biopsies ultimately replace pathologists?

Speaker: Professor Liz Soilleux, Dept of Pathology, University of Cambridge and Lyzeum Ltd

Patient biopsies are examined by pathologists under the microscope to give a diagnosis. There is a global shortage of pathologists, meaning that there are often delays in the examination of biopsies. Duodenal biopsies are a common specimen type; they rarely contain cancer and so are often left in backlogs. However, this makes them a safe starting point for the development of automated approaches to diagnosis, in particular for coeliac disease. This talk will explain what currently happens in histopathology departments and will describe our approach to developing an automated diagnosis for coeliac disease, including the successes and challenges!

21 October — Brain Boost: Healthy Habits for a Happier Life

Speaker: Professor Barbara Jacquelyn Sahakian, Department of Psychiatry, University of Cambridge

Our mental health is just as important as our physical health. In times of stress, enhanced cognition and reserves of resilience are vital in maintaining our wellbeing. This talk will draw on evidence-based ways to improve our brain health, cognition, and overall wellbeing based on *Brain Boost: Healthy Habits for a Happier Life*. I will explore the benefits of exercise, diet, sleep, social interactions, kindness, mindfulness and learning and how adopting these healthy habits will lead to a longer, happier life and a flourishing society.

28 October — The Biology of Human Ageing: Separating Ageing from Inactivity

Speaker: Professor Stephen Harridge, Centre for Human & Applied Physiological Sciences, School of Basic & Medical Biosciences, King's College London

Whilst we are living longer, for many these extra years of life bring poor health and compromised function. Our "healthspan" is not keeping pace with our increased lifespan. As we age our functional capabilities decline, we are less skilled at everyday living and become at increasing risk of events like falling. We often ascribe these change to simply getting older, the results of an "ageing process". This is correct, but only in part. I will discuss how ageing trajectories can differ markedly between people, and the vital roles that physical activity and exercise play in maintaining "age-appropriate" physiological function.

4 November — Echoes from the Edge of Thwaites Glacier, West Antarctica

Speaker: TJ Young, Lecturer in Physical Geography and Remote Sensing, University of St Andrews

To investigate the (in)stability of Thwaites Glacier in West Antarctica, the Thwaites Interdisciplinary Margin Experiment (TIME) applies a variety of geophysical techniques to image the boundaries of Thwaites Glacier, which separate fast-flowing from stationary ice. TIME uses a variety of radar, seismic, and geodetic surveys to shed light on how the environment beneath glaciers determine its flow behaviour. The behaviour of Thwaites Glacier—often nicknamed the “Doomsday Glacier” by the press—is thought to determine the overall (in)stability of the larger West Antarctic Ice Sheet, which if completely destabilised and melted, could raise global sea levels by 10 feet!

18 November — Where are we with repairing the brain in Parkinson’s Disease?

Speaker: Roger Barker, Professor of Clinical Neuroscience, Honorary Consultant Neurologist, University of Cambridge

Parkinson's disease (PD) is a common age-related neurodegenerative condition that presents with a combination of motor problems. PD has as part of its core pathology the loss of a specific population of nerve cells that release dopamine. The loss of this pathway, identified over 60 years ago, led to the development of dopamine drugs to treat PD. These drugs create their own side effects and thus for over 50 years, attempts have been made to better treat PD by replacing or restoring the lost cells. I will present the history and status of repairing this pathway in PD.

2 December — Textile and dye analysis - An overview of scientific research at the British Museum

Speaker: Dr Diego Tamburini, Scientist: Polymeric and Modern Organic Materials, Department of Scientific Research, The British Museum

Identification of colouring materials used for textile dyeing is challenging, due to the variety of natural sources used by humans throughout history, and complicated by the invention of synthetic dyes. Comprehensive molecular databases are needed for accurate identifications, and these need reliable reference materials. Mass spectrometry emerges as the state-of-the-art technique in this field. I will showcase the potential of mass spectrometry techniques, especially high-pressure liquid chromatography coupled to tandem mass spectrometry, for dye analysis. A selection of case studies from the British Museum’s collection will highlight the challenges of archaeological and historical textile analysis in a museum context.

9 December — Saving our Insects

Speaker: David Goulson, Professor of Biology, University of Sussex

Insects are fascinating, beautiful, and vitally important; without them ecosystems would grind to a halt. Dave Goulson will explain why insects are declining, and the consequences if we allow this to continue. He will then consider the many ways that we can all get involved in saving our insects, by inviting them into our gardens, and by turning our cities into havens for bees, butterflies and a diversity of other insects.