Cambridge Teaching Forum 2024
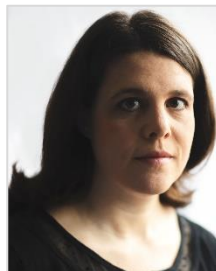

Thursday 18 April
Student Services Centre

Opening Address

Prof. Bhaskar Vira
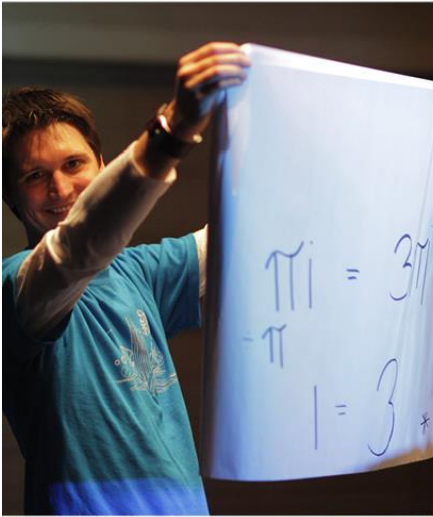Pro-Vice-Chancellor for Education

Keynote Speaker

Dr Camille Kandiko Howson
Associate Professor of Education
Imperial College London

UNIVERSITY OF CAMBRIDGE
Cambridge Centre for
Teaching and Learning

Practicalities

Finding the Teaching Forum

The Cambridge Teaching Forum 2024 will take place at the Student Services Centre, New Museums Site. Please see the map for directions.

Registration will take place from 9.30 for a 10.00 start. Follow directions for the atrium.

Plenary sessions will take place in the Babbage Lecture Theatre, which is in the David Attenborough Building, on your left as you exit the atrium into the New Museums Site.

Parallel sessions will take place in the Exam Rooms adjoining the atrium, and in the New Wing Seminar Room on the second floor, accessible via the stairs or lifts. Refreshments will be served in the atrium itself.

Assistance

If you need assistance, please look for a member of the CCTL team, who will be wearing purple lanyards. There should usually be somebody available in the atrium. Otherwise, please ask at the main Student Services Centre reception desk.

Event Recording and Photography

The plenary sessions will be recorded to share with delegates and other members of the University afterwards. Questions will not be included in the recording.

A photographer will be present throughout the day. These photos may be used by the Centre for Teaching & Learning in promoting events in a variety of formats such as webpages, social media and publications. If you do not wish to be identifiable in any photos, please let us know at registration in the morning.

Agenda

| 09.30 | **Atrium** |
| | **Registration** |

10.00	**Babbage Lecture Theatre**
	Opening Address
	Professor Bhaskar Vira Pro-Vice-Chancellor for Education, University of Cambridge

10.15	**Babbage Lecture Theatre**
	Keynote Speaker: Teaching excellence and educational gain: lessons for staff and students
	Dr Camille Kandiko Howson Associate Professor of Education, Centre for Higher Education Research & Scholarship, Imperial College London

| 11.00 | **Break** |

| 11.20 | **Parallel Session One** |

	Exam Room A&B	**Exam Room C**	**Exam Room D**	**New Wing Seminar**
	Presentations	*Lightning Talks*	*Workshop*	*Workshop*
	• **Careers Education 2.0: a pedagogically sound and inclusive approach** Beka Kimberly & Lucy Romijn • **Can creativity be taught online? Experiences with a metacognitive approach** Emily Tannert Patterson & Prof. Nathan Crilly	• **Teaching & Learning Community of Practice** Chris Baker • **Teaching professional risk: an exploratory review across different academic disciplines** Dr Hannah Wong • **Hidden assumptions: helping first-year chemistry undergrads transition to university learning & assessment** Andrea Chlebikova	• **Climate & sustainability education: building skills through partnership** Dr Amy Munro-Faure, Christine Özden, Shumona Nath, Millie May & Catrin Darsley	• **Designing teaching and learning projects: from methods to ethics applications** Dr Ruth Walker & Dr Pui Ki Patricia Kwok

| 12.10 | **Lunch** |

| 13.00 | **Parallel Session Two** |

	Exam Room A&B	**Exam Room C**	**Exam Room D**	**New Wing Seminar**
	Presentations	*Workshop*	*Presentations*	*Workshop*
	• **Where did we start and how far have we come? Reflections on working on awarding**	• **Supporting supervisors in developing their practice**	• **The role of a Climate Change Education Fellow: expediting inclusion of**	• **AI: from cautious to optimistic** Chris Baker, Dr Ellie

	gaps with students and staff in the APP Participatory Action Research Project Dr Ruth Walker & Dr Pui Ki Patricia Kwok • **Teaching Review: emergent themes and next steps** Melissa Rielly & Caredig ap Tomos	Dr Sonja Dunbar, Prof. Matthew Mason, Dr Eva Hellmann & Ollie Bardsley	**sustainable healthcare into the School of Clinical Medicine's curriculum** Dr James Smith • **Sustainability teaching in Chemical Engineering & Biotechnology: student projects distilled** Dr Zachariah Bond & Shumona Nath	Greer, Alberto Garcia & Laura Jeffrey
13.50	**Transition: 10 minutes**			
14.00	**Parallel Session Three**			
	Exam Room A&B *Workshop* • **Exploring student workload** Dr Claire Michel	**Exam Room C** *Presentations* • **Creating effective workspaces and support for neurodivergent postgraduate researchers** Dr Amanda Brunton • **Understanding complexity, challenges and capabilities in neurodiversity** Julie Bailey	**Exam Room D** *Panel* **Supporting students' skills development in the College environment: new initiatives** Chaired by Dr Mary Beth Benbenek With contributions from: • Dr Carys Brown • Dr Stuart Davis • Daniel McKay • Dr Ellie Greer	**New Wing Seminar** *Presentations* • **Students' learning experiences of Engineering: a focus on the gender awarding gap** Aakash Gupta & Dr Kamilah Jooganah • **A qualitative window into the holistic student experience** Dr Iulia Conda
14.50	**Transition: 20 minutes**			
15.10	**Babbage Lecture Theatre** **Panel: Teaching & learning at Cambridge: perspectives on developing practice** Chair: Dr Mary Beth Benbenek Panel: Dr Sonja Dunbar, Prof. Dee Scadden, Dr Matt Wilkinson, Prof. Silke Mentchen			
15.50	**Babbage Lecture Theatre** **Closing Remarks** Dr Meg Tait Head of the Cambridge Centre for Teaching & Learning			
16.00	**Atrium** Post-event networking space			

Keynote Speaker

Dr Camille Kandiko Howson
Teaching excellence and educational gain: lessons for staff and students

Abstract

We know there is more to higher education than a piece of paper and a walk across a stage. Although excellence measures can be based on input and output measures, we also need to consider the quality of the experience that students have, what they have gained from their time and efforts in higher education. We know it is more than a degree, but how do we go about capturing it?

We know there is no single silver bullet metric to measure the outcomes of higher education and that learning goes beyond disciplinary knowledge, also including wider skills and affective measures, and that robustly measuring learning gain requires multiple indicators. We are well-versed in awarding gaps, but how do we identify and intervene what is leading to those gaps, addressing equity rather than outcomes?

This talk draws on a decade of research on learning gain in higher education, the policy context for accounting for outcomes of higher education and new ongoing QAA-funded research on how institutions are articulating their unique approaches to capturing the educational gain of their students. How this can be integrated into already full workloads, for staff and students, will be discussed, as well as how notions of gain can be implemented in local contexts.

Profile

Dr Camille Kandiko Howson, PFHEA, is Associate Professor of Education in the Centre for Higher Education Research & Scholarship (CHERS) at Imperial College London. She is an international expert in higher education research with a focus on student engagement; student outcomes and learning gain; equality and social justice; quality, performance and accountability.

Camille works to support high quality and high impact pedagogical research and collaborate with colleagues to conduct disciplinary-based educational research. Her current research focuses on international and comparative higher education; the curriculum; using learning analytics to support the student experience; academic motivation, prestige and gender; student engagement, identify and belonging; intersectionality in research design.

Camille is passionate about making higher education more equitable and fair, supporting women and those underrepresented to access, succeed and work in academia.

Panel Session

Teaching & learning at Cambridge: perspectives on developing practice

Session Chair:
Dr Mary Beth Benbenek, Senior Teaching Associate, Cambridge Centre for Teaching & Learning

Panel contributors:

- *Dr Sonja Dunbar, Department of Plant Sciences*
- *Prof. Dee Scadden, Department of Biochemistry*
- *Dr Matt Wilkinson, Department of Zoology*
- *Prof. Silke Mentchen, Department of Modern & Medieval Languages & Linguistics*

Abstract

This panel features four academics on the new Teaching & Scholarship Academic Pathway, which the collegiate University created to recognise and promote excellence in teaching. They will discuss how they are interpreting and exercising these roles in their particular contexts, and also reflect on the potential that teaching-focused academic roles hold for the landscape of teaching and support of learning at Cambridge. The panel will also consider the 'scholarship' aspect of the T&S Pathway and share how they are interpreting the integration of research and practice to inform teaching and learning support as well as educational development.

Panel Members

Sonja Dunbar is an Associate Teaching Professor in the Department of Plant Sciences where she delivers and supports teaching in Natural Sciences Parts IA and IB. Her current research projects explore scientific skill development in higher education. Sonja is also a Tutor, Admissions Tutor and Fellow at Churchill College.

Dee Scadden is Professor of RNA Biology at the Department of Biochemistry, where she is the Deputy Head of Department for Undergraduate Teaching. Dee is also the Director of Technology-Enabled Learning in the School of the Biological Sciences, Chair of the Faculty Board of Biology, and Chair of the Language Centre's Committee of Management.

Silke Mentchen is Professor of German Studies at the Faculty of Modern & Medieval Languages & Linguistics. She is the Undergraduate Teaching & Examining Officer for the German Section, and also Fellow and Tutor at Magdalene College.

Matt Wilkinson is a Teaching Associate in the Department of Zoology and a Fellow and Director of Studies at Jesus College.

Mary Beth Benbenek, who will be chairing the session, is the Director of the Advancing Educational Practice Programme and leads on the pedagogical support for undergraduate supervisions at CCTL. She is also a Tutor and Bye-Fellow at Lucy Cavendish College.

Parallel Session One

Exam Room A&B: Presentations

Careers Education 2.0: a pedagogically sound and inclusive approach

- *Beka Kimberley, Careers Consultant, Careers Service*
- *Lucy Romijn, Careers Consultant, Careers Service*

Careers is a huge, multi-faceted topic with a significant relationship with equality, diversity, inclusion and social mobility. With 73% of the employers surveyed by the Institute for Student Employers in 2023 having an established target to recruit more diverse graduates and Cambridge becoming an increasingly diverse institution, the Careers Service is evolving its education provision to ensure it is consistently pedagogically sound and inclusive by design.

In designing careers workshops, we recognise that our learners come with a range of experiences, prior knowledge, and pre-conceptions of the topic to be covered. These experiences and pre-conceptions, to varying degrees, intersect with and are influenced by learners' socio-cultural characteristics. In acknowledging this, we recognised that we not only needed to employ a pedagogical framework to empower students to take an active role in developing their employability and career management skills but that it was imperative to take a socially just approach to the careers topics covered in our workshops. Hooley, Sultana and Thomsen (2021) set out five signposts to a socially just approach to careers guidance which we are embedding into our approach to careers education. These signposts facilitate explicit recognition that careers do not play out on a level terrain and encourage practices that move away from an individualistic approach of 'solving the problem' to one that addresses the socio-cultural and structural influences on labour market practices and the way we talk about careers with the aim to develop awareness and engender change at a number of levels.

The social justice approach to careers education is complemented by constructivist approaches, which focus on experiential and active learning to facilitate skills development (Kolb, 1984; Bonwell and Eison, 1991). The experiential learning approach creates the space for learners to share and reflect on their experiences, enabling us to harness them to support the development of career management skills while facilitating opportunities to bring in social justice and inclusivity topics pertinent to our learners' experience of the workshop topic.

In this presentation, we'll use the case study of our Career Essentials programme to illustrate how we've implemented these theoretical concepts to develop an inclusive, socially just careers education programme. In redeveloping the Career Essentials programme, our goal was to ensure the programme is designed with a consistent pedagogical approach, is inclusive by design and in line with the university mission to contribute to society in a positive way, research-led and demonstrates excellence within the field of careers, employability, and education more broadly.

Can creativity be taught online? Experiences with a metacognitive approach

- *Emily Tannert Patterson, Learning Designer, Cambridge Online Education*
- *Nathan Crilly, Professor of Design, Department of Engineering*

Creativity is increasingly sought after in the professional world, across all regions, sectors, and levels. At the heart of creativity is the ability to broaden one's thinking, to remain mentally open, and to lead the thought process in unfamiliar directions. All this involves thinking about one's own thinking, or 'metacognition'. Metacognition is an important aspect of creative performance and of managing that performance in others. We need to be able to identify what kind of thinking we are currently engaged in and what kind of thinking might be more productive. However, many people's education doesn't include 'thinking' as a topic, even though everyone requires thinking in all aspects of their lives and work.

Teaching people to become aware of and in control of how they think is challenging regardless of the setting or number of participants. It's made even more challenging in an online setting that is largely asynchronous, with limited learner-to-teacher and learner-to-learner interaction. And yet the Cambridge Advance Online course titled 'Creativity, Problem Solving and Design Thinking' sets out to do just that: to teach creativity through metacognition. Launched in January 2022, more than 150 participants have now taken this course; feedback shows that participants especially value the metacognitive aspects of the course, and they report that this has made them more effective at identifying, reframing, and solving problems at work. So how do we manage to achieve this challenging task, of teaching people to improve their own thinking skills, despite participants working largely independently from all over the world? This presentation will cover the pedagogical principles and technological tools that underpin learners' experience on the course. Additionally, we will give an overview of the course development process at Cambridge Advance Online.

Exam Room C: Lightning Talks

Teaching & Learning Community of Practice: who, what and why

Chris Baker, Head of the Blended Learning Service

The University of Cambridge provides an outstanding education for its students, but it can often also feel disconnected and siloed in relation to teaching and learning practices, experiences and approaches. The Teaching & Learning Community of Practice seeks to provide one way to address this through creating spaces where colleagues can come together to network, share practice and explore shared challenges together across the academic year. This lightning talk will provide a brief overview of communities of practice as a way of bringing people together and introduce the newly formed Teaching & Learning Community of Practice. It will share with delegates what they can expect from this community of practice, why it was established and who it hopes to engage. It will also provide an introduction to the core team members, our aspirations for what we hope the community will become, and, importantly, how to get involved.

Teaching professional risk: an exploratory review across different academic disciplines at Cambridge

Dr Hannah Wong, Veterinary Anatomic Pathologist, Department of Veterinary medicine

The study discussed in this presentation is an exploratory review of how risk is conceptualised and the types of teaching and learning activities that are used to teach management of risk in professional decision making. Differences in the conceptualisation of risk, tacit contextual information, and ambiguous communication are factors that make teaching and learning about risk challenging. Semi-structured interviews were conducted with course-organisers from four academic disciplines taught at the University of Cambridge where judgement of this type of risk are used in daily professional work; education, medicine, veterinary medicine and volcanology. The interviews were analysed by thematic analysis with deductive coding using a pre-designed conceptual framework. Present in all of the interviews, the conceptualisation of risk is taken from an applied approach rooted in the specific professional situation, rather than leading with the epistemological construction of risk. Subjects varied in the broadness of their conceptualisation of risk, but there were also connections between a broad conceptualisation of risk and intent to develop professional preparedness for public-facing roles were present. The study also found that subjects used similar teaching activities formats, but varied in the volume of content. Acquisition was used for overarching concepts and small group discussion was the mainstay of professional risk teaching for all subjects. Those subjects that recognised the importance of the sociological and personal perspective to professional risk also included collaborative and productive teaching activities during the small groups, encouraging peer discussion and compromise. Taking the personal perspective one step further, both medicine and education included guided reflective activities around activities involving professional risk, and the curriculum includes aspects of professional coaching. In conclusion, because handling professional risk occurs at the interface between subject knowledge, soft skills and personality within a specific

societal and geographic context, the conceptual elements of risk furthest away from the original discipline are likely to be more unfamiliar to educators, and therefore are at risk of being overlooked in teaching. Where the conceptualisation of risk was narrow, teaching on professional risk lacked a cohesive narrative. Subjects that had a wide conceptualisation of professional risk were associated with an integrated curriculum of learning activities to support the development of professional behaviours. The reflective action of very broadly considering the impact of professional risk within a discipline may aid the creation of a conceptual framework upon which the curriculum can be mapped.

Hidden assumptions: helping first-year chemistry undergraduates transition to university learning and assessment

Andrea Chlebikova, Senior Project Chemist, Isaac Physics, Department of Physics

A good command of prior subject knowledge is a commonly recognised prerequisite of university lecture courses and Cambridge science undergraduates arrive at the University with a string of top grades at A level or equivalent. However, while students will have familiarised themselves with many core concepts as part of their previous studies, their knowledge of key ideas is often not fully secure. Students may lack fluency in using essential subject skills, and when recall and application of previously learned content is expected at the same time as new material is encountered, they may experience cognitive overload, or may be extending existing misunderstandings. Beyond facing subject knowledge barriers, first-year undergraduates have to make many adjustments to their learning processes and we often do not directly support them with these: taking their own notes rather than being able to rely on a course textbook; navigating the course content and its blurry boundaries without access to a formal syllabus; practising with past paper questions without clear marking guidelines or mark schemes; encountering questions that are much less scaffolded than what they are used to; structuring their answers independently on blank pages of paper.

Building on an experience of working with A level students as well as undergraduates, and working as an A level examiner as well as setting and marking Tripos papers, this talk explores some common challenges faced by chemistry students in their first-year of undergraduate studies. Some strategies for helping students with this transition are suggested: designing dedicated programmes (STEM SMART and STEMbridge), providing tools for and encouraging independent practice of fundamental skills, proactively addressing common misunderstandings, and explicitly modelling approaches and strategies for tackling university-style questions.

Exam Room D: Workshop

Climate and sustainability education: building skills through partnership

- *Dr Amy Munro-Faure, Head of Education & Student Engagement, Cambridge Zero*
- *Christine Özden, Global Director of Climate Education, Cambridge University Press & Assessment*
- *Shumona Nath, undergraduate student, Earth Sciences*
- *Mille May, undergraduate student, Human, Social & Political Science*
- *Catrin Darsley, Education Manager, Cambridge Zero*

It is difficult to consider what we as individuals can do in relation to the climate crisis, biodiversity and other environmental emergencies, or any number of social justice challenges. Often these massive and intersecting issues feel like they are too much or too multifaceted to bring into our roles at work. Cambridge Zero exists to maximise the University of Cambridge's contribution towards achieving a resilient and sustainable zero-carbon world. The team works within the University and with Cambridge University Press & Assessment to build climate and sustainability knowledge, understanding and skills within the formal curriculum, both internally and for millions of learners world-wide. We have explored the intersections between a number of subjects and global environmental challenges through our project work.

This session will share examples of best practice, explore high-impact but low-time commitment interventions for learning and teaching at Cambridge – including around key skills and ILOs – and consider barriers to providing compelling and useful education for a changing future. Participants will be invited to build a collective vision of how Cambridge could respond to climate and sustainability challenges through our learning and teaching. Brief presentations from partners will set the scene for the interactive session:

1. Cambridge Climate Society are interested in climate and sustainability education interventions within the formal curriculum. Millie May has been heading the CCS Education Project in seven departments, based on students as partners principles, to identify opportunities for climate and sustainability education.
2. Shumona Nath worked with Cambridge Zero and the Department of Chemical Engineering and Biotechnology as part of their summer 2023 Future Leaders Programme project to build climate and sustainability knowledge and skills into the new CEB Tripos. Their work directly informed the curriculum and pedagogies delivered since Michaelmas Term 2023.
3. Christine Özden is Global Director of Climate Education with Cambridge University Press & Assessment, working to empower learners internationally through climate change education. Current projects include bringing colleagues from across the wider University together to explore potential futures for education and building on presentations at COP28 for global impact.

We will then invite small-group discussion to support attendees in identifying opportunities for knowledge or skills development in subjects that they teach in or support. These ideas will be fed back to the group and into ongoing projects by Cambridge Zero.

New Wing Seminar Room: Workshop

Designing teaching & learning projects: from methods to ethics applications

- *Dr Ruth Walker, Senior Teaching Associate, Cambridge Centre for Teaching & Learning*
- *Dr Pui Ki Patricia Kwok, Project Associate, Cambridge Centre for Teaching & Learning*

Research into the learning and teaching experiences of students and staff is highly valuable, as it provides an evidence base for improving future educational experiences. This workshop will provide an introduction to higher educational research practices and processes for colleagues interested in developing – and potentially publishing – their project outcomes. While core ethical principles should always be followed in evaluation or research that involves students and staff, deciding whether a project is a (fairly straightforward) evaluation of practice or a more formal research project that might need ethics approval is a significant step in the initial design process.

Participants in this workshop will have an opportunity to:

- Clarify the difference between evaluation, evaluative research and research.
- Explore a range of methods for gathering data for 'insider' of practice-based research.
- Understand the importance of aligning appropriate methods with research questions and anticipated participants.
- Consider the ethical principles underpinning research with human participants.
- Discuss the pros and cons of common qualitative research methods to gather data.
- Receive practical tips about what is needed to preare a formal ethics application.

Participants will be able to ask questions and seek advice about their potential higher educational research projects, and learn more about the formal ethics review process for institutional teaching & learning research supported by the Cambridge Higher Education Studies Research Ethics Committee (CHESREC).

Parallel Session Two

Exam Room A&B: Presentations

Where did we start and how far have we come? Reflections on working on awarding gaps with students and staff in the APP Participatory Action Research Project

- *Dr Ruth Walker, Senior Teaching Associate, Cambridge Centre for Teaching & Learning*
- *Dr Pui Ki Patricia Kwok, Project Associate, Cambridge Centre for Teaching & Learning*

This is the fifth and final year of the Access & Participation Plan Participatory Action Research Project (APP PAR Project), designed to support the University meet its commitment to 'eliminate' our two most significant awarding gaps by 2025: those affecting Black British students, and disabled students with declared mental health conditions. To those involved in work on awarding gaps it may not be a surprise that closing the gaps has been more challenging than originally hoped.

This qualitative research project was initiated by the Cambridge Centre for Teaching & Learning to help us collectively understand the reasons for these awarding gaps more fully. The work also aims to develop recommendations to feed into an action plan for the University. Methodologically, we draw on the ethos of inclusive research to involve students as co-researchers, who might otherwise have been perceived as 'subjects' for analysis rather than "instigators of ideas, research designers, interviewers, data analysts, authors, disseminators and users" (Walmsley & Johnson, 2003). Funding was provided for twenty student research assistants each year, who represented the two target student cohorts and drew on their lived experience of Cambridge education.

For this fifth year, we have invited staff as co-researchers to form six project teams. This student-staff partnership seeks to focus on what the implementation of student recommendations from previous years might look like in their local contexts.

This presentation will be an opportunity for the project organising team to share their reflections on the lessons learned in efforts to:

- Leverage our qualitative and student-generated data to augment and enhance the existing institutional statistical data on awarding gaps in an effort to encourage meaningful action across the collegiate University.
- Implement recommendations for actions in local contexts, with the development of student-staff partnership projects in specific courses or departments.
- Enable safe spaces for students to frankly reflect on the structures and practices that inhibit the educational experiences of themselves or their peers.
- Manage the ethical issues of representation and institutional capitalisation of the students voices as 'data' gathered throughout this project.
- Build on the project findings to inform or contribute to the next five years of APP work, which will involve different student cohorts and 'risk factors'.

Teaching Review: emergent themes and next steps

- *Melissa Rielly, Business Improvement Manager, Education Services*
- *Caredig ap Tomos, Undergraduate Access, Education & Participation Officer, Cambridge Students' Union*

This session will provide an update on progress of the Teaching Review. The Review has been commissioned with two primary objectives: 1) to review the causes (real and perceived) of overwork in the undergraduate student population and 2) to review and address sustainability of the supervision system, considering the available resources (human and financial) and the impact on quality of our educational provision. Throughout the Lent Term the Review has been gathering data from existing sources, staff and students. The session will outline the strategic themes identified to date, timeline and next steps.

Supporting supervisors in developing their practice: examples from the Biological Sciences

- *Dr Sonja Dunbar, Department of Plant Sciences*
- *Prof. Matthew Mason, University Physiologist, Department of Physiology, Development & Neuroscience*
- *Dr Eva Hellmann, Sainsbury Laboratory*
- *Ollie Bardsley, 6th-year student in Veterinary Medicine*

Undergraduate supervisions in the biological sciences are designed entirely by the supervisor, with no pre-determined work for students to complete between sessions. This brings great freedom and opportunities to explore beyond the lectures and develop skills, but can be a daunting and time-consuming challenge for a first-time supervisor. Assessment in the biological sciences is often essay-based. Individualised support of the development of essay writing skills is both a key benefit of the University's small group teaching and an aspect many supervisors report uncertainty and a lack of confidence in, especially those who did not progress through the Oxbridge system themselves. In this session we'll showcase examples of supporting supervisors and students from Plant Sciences and Physiology, Development and Neuroscience. These include Moodle sites for guidance and shared resources, observation schemes to provide feedback and support for key skills such as essay writing. We'll also hear perspectives from supervisors that have engaged with this support, and their experiences of developing their practice. Attendees will then be invited to consider and share the key challenges that supervisors face in their disciplines, and we'll explore options for scaffolding support and the best formats available to them through a whole room discussion.

The role of a Climate Change Education Fellow: expediting inclusion of environmentally sustainable healthcare into the School of Clinical Medicine's curriculum

Dr James Smooth, Assistant Director of Public Health Studies, Public Health Education Group, Department of Public Health & Primary Care and Sustainability Co-Lead, Cambridge Public Health

The Lancet has stated 'Climate Change is the biggest global health threat of the 21st century' and also 'the biggest health opportunity'. In response to this, alongside student pressure, in August 2023 the School of Clinical Medicine created a novel role entitled Climate Change Education Fellow. The principle aim of this being to integrate education on environmental change and health into the medical curricula. Dr James Smith who leads on sustainability education within the School of Clinical Medicine appointed Dr Rebecca Davis, a GP with a keen interest in environmentally sustainable healthcare, to the role. In this presentation, James will talk about establishing the new position, the work to date and future hopes. The mainstay of the fellow's role has focused on meeting with subject leads, upskilling faculty and supporting integration of environmentally sustainable healthcare concepts into seminars and lectures. Alongside the curriculum work, wider aspects of the work have included teaching students, junior doctors and departments within hospitals on campus, sharing knowledge with local respiratory pharmacists and helping organise events such as a recent panel discussion entitled 'Exploring Careers within Sustainable Healthcare'. Having the dedicated role has helped expedite and widen the work previously being done by James and the School of Clinical Medicine. Education on the ways the environment can affect health and additionally how clinicians can practice more sustainably have been promoted. Integrating this throughout the curriculum has increased awareness and supported normalisation of the notion that sustainable healthcare is a key concept for all 21st century doctors to know about.

Sustainability teaching in Chemical Engineering & Biotechnology: student projects distilled

- *Dr Zachariah Bond, Teaching Associate, Department of Chemical Engineering & Biotechnology*
- *Shumona Nath, undergraduate student, Chemical Engineering & Biotechnology*

Over the summer of 2023, a project carried out by an undergraduate set the foundation for a series of student lead projects to direct and refine our teaching of sustainability and climate at the department of Chemical Engineering and Biotechnology (CEB). We will use these projects as a case study, in this talk, to explore how student lead projects on teaching can enrich a course. The original project investigated the syllabus to determine opportunities for sustainability to be integrated into new and existing courses as well as finding out about climate education in other similar departments. Additionally useful material for course developers was compiled and opportunities were identified to bring CEB's own sustainability research themes into the taught material. The outcomes from the project produced two further student projects, one student lead, the other departmentally instigated, which are ongoing at the time of writing.

The Department of Chemical Engineering and Biotechnology is in a particularly opportune time for student input into the course, having recently launched the new, directed entry, "Chemical Engineering and Biotechnology Tripos" which aims to improve on the pervious, 2nd year entry, "Chemical Engineering Tripos" in a number of ways, including integrating climate education and sustainability into all topics as well as overhauling the dedicated sustainability courses. Recognising that other educational bodies may not be well posed to rip up their old courses we will attempt to suggest how to involve students in slightly more achievable course improvements and will also discuss a number of key barriers to the projects, such as how to get staff on board and how to strike a balance between control and direction on the part of the department and inspiration and ownership on the part of the students.

New Wing Seminar Room: Workshop

AI: from cautious to optimistic

- *Chris Baker, Head of the Blended Learning Service*
- *Dr Ellie Greer, Acting Head of Student Development, Hughes Hall*
- *Alberto Garcia, Academic Skills Librarian, Wolfson College*
- *Laura Jeffrey, Librarian and Research Skills Specialist, Wolfson College*

We all know students use AI in their studies. As teachers, it can feel like we are constantly one step behind our students. How can we better ensure that students are aware of the possibilities and limitations of AI tools, without being prescriptive or proscriptive? We have been supporting students navigate this landscape by offering in-person workshops and creating an asynchronous guide, which have given us the opportunity to work with students and gain insights into their uses of AI. From group discussions, observations, and anonymous surveys, we have seen the creative, varied, impressive (and sometimes alarming!) ways that students are making use of AI in their studies. Informed by student data, this workshop will ask participants to work together to consider the opportunities presented by AI. It will also ask what participants are cautious about, and where they identify potential downsides to integrating AI into research and study. Finally, participants will share where they would like to see further support available – for staff, researchers, and students – to help them navigate the current Cambridge context. After the session we will circulate follow-up materials to participants, with answers to questions and suggestions for practice. We will also be asking for expressions of interest in joining a regular discussion group or knowledge-exchange community for colleagues who want to develop their awareness of emerging technologies and possibilities. Such a forum will allow the group to continue learning together and sharing our experiences while lessening the time necessary to discover, register for, learn, and adopt new tools and workflows.

Parallel Session Three

Exam Room A&B: Workshop

Exploring student workload

Dr Claire Michel, Education Projects Manager, Office of the School of the Biological Sciences

This session aims to provide time to appreciate the complex set of interconnected topics that influence student workload, learn from colleagues' experiences, and identify short and long-term ideas for actions. Student workload is a very topical issue at Cambridge currently. There is a balance to be found between encouraging students to stretch themselves and putting them under an excessive burden of work. The School of the Biological Sciences (SBS) has been undertaking wide-ranging curriculum reviews for the past three years, focused on the preclinical medicine and veterinary medicine courses and the biological natural sciences tripos. During our numerous discussions with academics, students and professional services staff, several topics relating to student workload have emerged: the course content and its ever-growing syllabus, the assessment formats and the associated revisions, the skills expected of students to effectively engage with learning and assessment, the supervision system, and the diverse forms of disabilities that can affect students. Each of these areas can contribute to an increased student workload, and their impact is cumulative for some students. In this session, we will first share reflections on student workload based on the SBS curriculum reviews. We will then ask participants to focus on a selection of themes and to reflect on the following questions: What is the current impact of each topic on the student workload? What are the existing good practices to limit this impact? In what ways could the current situation worsen if no action is taken? What short- and long-term strategies and actions can be taken to minimise or eliminate the impact of these topics on students' excessive workload?

Creating effective workspaces and support for neurodivergent postgraduate researchers

Dr Amanda Brunton, Researcher Development Associate, Cambridge Centre for Teaching & Learning

At CCTL (Cambridge Centre for Teaching and Learning) we have recently put new initiatives into place to cater to the specific needs of our neurodivergent postgraduate researchers. This presentation intends to offer an outline of how the programme was developed and the impact it has had on our students, as well as gesturing to our plans for the future. There is a growing awareness of the needs of neurodivergent students in HE, however this is often focused on undergraduate provision. While many of the same principles for educational support apply to neurodivergent undergraduate and postgraduate students alike, the nature of a research qualification often presents a differing set of challenges that require more specific support. For example, the transition from a highly structured taught programme to the more 'freeform' nature of a research degree can be challenging for neurodivergent students in ways that differ from their neurotypical peers. As such, students with autism and ADHD may suddenly be required to develop new coping strategies to manage a new type of workload and to maintain focus on their research. The core of my presentation is focused on our 'Autism and ADHD-Friendly Writing Retreat', a two-day event that provides a welcoming and comfortable environment for neurodiverse students to focus on their writing, with a half-day of training embedded in the first day. This training offers support and advice for handling some of the challenges of being a neurodivergent PhD student, while emphasising neurodivergence as a strength and a resource in the wider research community. The Writing Retreat prompted a review of best practice when it came to the inclusiveness of our other workshops and has provided the opportunity to work with neurodivergent students directly to enhance our programme with other tailored offerings (for example, many students wanted more support on working with their supervisors). More importantly, I will discuss how activities like this can create a sense of belonging in academia, fostering a community of researchers who recognise themselves in one another. This is so important for students who often feel that they must hide their neurodivergence at all costs in order to fit in as a researcher. This sense of belonging is also a crucial step in enabling students to feel confident in requesting the kind of reasonable adjustments that they need not just to complete their PhD, but to thrive.

Understanding complexity, challenges and capabilities in neurodiversity

Julie Bailey, Specialist Learning Mentor

There is so much we don't know about neurodiversity in our student population, but it remains an urgent priority to improve wellbeing and outcomes for our neurodivergent students. This talk guides us through what we do know, and ways to navigate uncertainty and ambiguity. Questions facing higher education institutions are addressed: Why are we seeing such large increases in the number of neurodivergent students? How can we make sense of changing neurodiversity categories and identities? What are the longer-term pandemic effects on neurodiversity? What can we expect the neurodiversity of our

students to look in future cohorts? I present a model of neurodiversity in which mental health challenges are considered alongside neurodevelopmental conditions (e.g. Autism, ADHD) and specific learning difficulties (SpLD) to better understand the differences in how our students experience their learning at university. Results from data-driven transdiagnostic analysis of student neurodiversity characteristic from my doctoral research shed some light on the complexity in our post-pandemic cohorts. I'll explain how this can provide a useful basis on which to allocate teaching resources and enhance student support. Findings are also presented on the relationship between specific neurodiversity characteristics and the experience of learning for undergraduate students, providing explanations for students finding their learning exhausting, distracting or overwhelming. Designing learning environments to reduce overwhelm and other challenges for neurodivergent learners can be complex. Strategies for inclusion checklists and approaches to removing barriers to learning for autistic students, students with ADHD and other neurodivergent students are presented.

Exam Room D: Panel

Supporting students' skills development in the College environment: new initiatives

Chair: Dr Mary Beth Benbenek, Senior Teaching Associate, Cambridge Centre for Teaching & Learning

Contributors:

- *Dr Carys Brown, Head of Academic, Personal & Professional Development, Trinity College*
- *Dr Stuart Davis, Deputy Senior Tutor for Teaching & Learning, Girton College*
- *Daniel McKay, Emma Experience Director, Emmanual College*
- *Dr Ellie Greer, Acting Head of Student Development, Hughes Hall*

In recent years, many Colleges have started to place greater focus on supporting students' development of academic, personal and professional skills. The reasons behind this emerging emphasis are varied and include a recognition of the need to support students' transition into, through and beyond Cambridge, to improve their sense of belonging in the College and more broadly at Cambridge, or simply to reconsider the unique purpose and potential of the College context in students' learning. Underpinning many of these efforts is also the aim to support students from widening participation backgrounds in particular with their experience of Cambridge.

This panel features representatives from four Colleges speaking about new initiatives to enhance the educational experience of their students from a skills perspective, exploring both the thinking behind their design and development and what they have learned from the implementation of these initiatives.

Students' learning experiences of Engineering in Part I: a focus on the gender awarding gap

- *Aakash Gupta, final-year undergraduate student, Department of Engineering*
- *Dr Kamilah Jooganah, Senior Teaching Associate, Cambridge Centre for Teaching & Learning*

This presentation reports on findings from a research project which investigated undergraduate students' learning experiences of Part I of the Engineering Tripos. The research aimed to identify what students perceive to be the key enablers and challenges to their academic success. Furthermore, the research sought to understand the reasons behind the observed gender awarding gaps in the Department of Engineering and propose evidence-based recommendations to address these which could help inform the Part I Review and broader Departmental discussions on enhancing educational practices to make these more inclusive.

Through adopting a student-staff partnership approach, we conducted a series of focus groups and semi-structured interviews with undergraduate students in the Department of Engineering. Thematic analysis of the data revealed that the majority of students believed that the Department of Engineering was one that 'genuinely cared for students', and lecturers were perceived as 'approachable' and did their best to support student learning. However, students believed that there were areas that could be improved including in relation to: 1) the scheduling of exams, which created less than optimal conditions for student performance; 2) supervisions, which students believed could be improved such as through dialogue extending beyond the set problems; and 3) the Department creating structured opportunities to support the formation of student peer groups. Peer groups appeared to be particularly significant for female students' sense of belonging to Engineering and in some cases, academic success.

A qualitative window into the holistic student experience

Dr Iulia Coanda, Blended Learning Research Specialist, Blended Learning Service

Exploring the landscape of education at the University of Cambridge through the lens of User Experience (UX) recognises students as important voices and active contributors to their education. This qualitative research presents findings that show various facets of students' educational environment, mirroring an anthropological exploration of worldviews, practices, and behaviours. The talk will explore emergent themes from the data which are grouped into diversity, inclusivity flexibility, collaboration, and sustainability. Diversity in teaching and learning took centre stage in the findings, urging the introduction of interactive, engaging, and creative teaching methods. Additionally, the creation of more inclusive student experiences is dependent on better understanding of the complex needs and motivations of students, where flexibility and adaptability emerge as key attributes of a progressive educational environment. The research also underscores the importance of a collaborative education where interactions and accessible communication channels, shared decision-making, and collective knowledge construction among students and

academic staff are identified as important elements to fostering a sense of community and shared understanding. However, without the sustainability of such practices, especially in the context of students' mental health and well-being, the cultivating of a supportive and thriving learning environment will prove difficult.

By attending to these four thematic needs, we ensure our education continues to be relevant in a changing educational landscape and can equip students with skills that transcend conventional boundaries. The research's findings underscore the importance of fostering an environment that adapts, collaborates, and considers the well-being of students. The session will end by starting a discussion surrounding how we can attend to these goals without compromising the quality of our education or either of those aspects. That is, the presentation aims to give us food for thought on how can we contribute to the development and implementation of more interactive, flexible, and sustainable teaching methods and tools that cater to diverse needs and backgrounds, and the ways we can take into account student experiences when enhancing (digital) inclusivity.

The [Cambridge Centre for Teaching & Learning](#) supports educators, encourages innovation and provides a focus for enhancing education at Cambridge.

Our educational development work aims to provide a sustained focus on complex educational priorities, help develop an evidence base for both designing and evaluating enhancement activities, and engage with Departments and Colleges to identify opportunities to enhance teaching, learning and assessment. We aim to support the professional education and development of those who teach / support the learning of Cambridge students.

You can hear about new developments through our [Teaching & Learning Newsletter](#).

Cambridge Centre for Teaching & Learning

Student Services Centre
cctlenq@admin.cam.ac.uk
www.cctl.cam.ac.uk