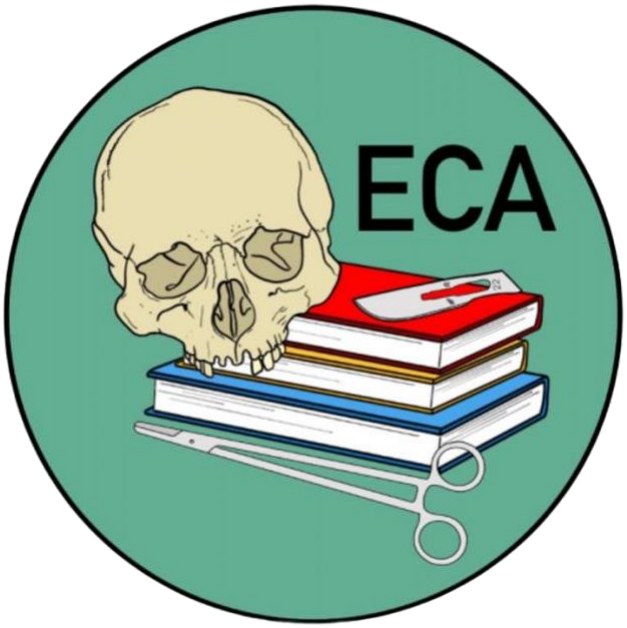

4th Early Career Anatomists Conference
23rd & 24th June 2025

Anatomy Unbound:

Integrating Disciplines & Connecting Generations

Hosted by the University of Nottingham
School of Life Sciences

University of Nottingham
UK | CHINA | MALAYSIA

EDEN

Wolters Kluwer

Contents

General Information & Website Link

All information relevant to the conference including campus map, workshops and social events can be found on the ECA website using the link below:

Scan the QR code or click here for the ECA website

Code of Conduct for Early Career Anatomists

The ECA group is committed to creating a safe, welcoming space where the differences of all members and participants cohabit, are respected and celebrated to ensure everyone can share their enthusiasm and curiosity for the anatomical sciences.

Our events provide a friendly forum in which to share information and knowledge and discuss the challenges and opportunities facing our industry. We encourage open discussions and debate, balanced with respect and consideration; therefore, we expect this to be reflected throughout your interaction with the community.

The ECA Committee is dedicated to providing a harassment-free experience for everyone interested in anatomical education, research and scholarship regardless of:

- gender identity
- sex characteristics
- sexual orientation
- age
- mental or physical ability/impairment/illness
- belief system (or lack thereof)
- ethnicity and nationality
- partnership status and circumstance (or lack thereof)
- pregnancy and family status
- economic background

All participants at ECA events must agree with the following code of conduct, whose purpose is to set out standards of behavior expected from individuals in the ECA community.

DO:

- treat others equally and fairly, without prejudice or bias
- promote relations with people involved in the ECA community that are based on openness, honesty and respect
- consider how you behave and use appropriate language (verbal and physical) when talking to, about, or in front of any individual involved in ECA or out with the community; ensuring it is not offensive, insensitive, sarcastic, derogatory or discriminatory
- challenge unacceptable and inconsiderate behavior which has the potential or causes harm/distress of any kind, reporting any concerns or breaches of this Code.

Violation of these rules may result in participants being investigated and potentially resulting in individuals being removed from the community without a refund at the discretion of the ECA Committee.

If any person believes that they have been subject to harassment, bullying or discrimination, please contact the President, Dr Jo Tomlinson (j.tomlinson@bristol.ac.uk), and Equality, Diversity and Inclusion Officer, Mx Alex Impedovo (alex.impedovo@nottingham.ac.uk) as soon as possible. Any complaint will be investigated promptly.

If you have any questions or concerns, feel free to contact the Equality, Diversity and Inclusion Officer, Mx Alex Impedovo (alex.impedovo@nottingham.ac.uk)

4th ECA Conference Schedule

Day 1: Monday 23rd June, 2025				
TIME	**CONTENT**			**VENUE**
10:00-10:30	Arrival, Networking and Registration			Stairwell, A floor
10:30 - 12:00	**Session 1: Collaborations in Anatomy** Chaired by Leia Boote and Jemima Chukwu			
10:30-10:45	**Welcome Talk**: Leia Boote (Conference chair)			Lecture theatre A03
10:45 – 11:10	**Invited Speaker: Dr. Yvonne Mbaki** Collaborate to Elevate			
11:10 -11:25	***Millie Patel, Hull York Medical School*** Collaborative Practice in Anatomy – a case study surrounding the benefits of a co-teaching model in Higher Education.			
11:25-11:40	***Tereza Littova, University of Nottingham*** The Impact of Navigation and Robotics in Adult Spinal Deformity Correction Surgery on Pedicle Screw Accuracy and Patient Outcomes: A Systematic Review			
11:40-11:45	***Leandros Rapteas, University of Birmingham*** Embedding Equity, Diversity, and Inclusion in Anatomy: A Framework for Transformative Practice			
11:45-12:00	Brain Break			
12:00 - 14:00	**Session 2: Connecting Generations: a journey through time** Chaired by Sadia Khan & Natasha Noel-Barker			
12:00 -12:30	**Invited Speaker: Cat Irving** Things in Jars: a potted history of fluid preservation in anatomical collections			Lecture theatre A03
12:30 -12:35	***Xiwang Yu, University of Glasgow*** Evolving Mortality Trends Among Anatomical Donors in Scotland: Adapting Anatomical Education to a Changing Population			
12:35 – 12:40	***Alex Whitworth, Brighton and Sussex Medical School*** Furthering Anatomical Understanding Through the Process of Dissection, Prosection and Digital Illustration: A Reflective account from a Medical Student			
12:40 – 12:45	***Sindy Melissa Sánchez Romo, Autónoma de Nuevo León, Mexico*** 3D printed facial electronic simulator for injectables in aesthetic medicine			
12:45 – 13:30	Lunch and Refreshments & Networking with Sponsors			Main Foyer, MP
13:30 – 14:00	Poster Exhibit and Networking			D floor Foyer
14:00 - 16:00	**Workshops**			
14:00 – 15:00	**Workshop 1: Alex Impedovo** Speaking of Bodies - Broad Language Beyond Anatomy **Location: D02**			
15:00 -16:00	**Workshop 2: Naila Ali and Maria Chalasti** Simplifying Embryology: A Hands-On Workshop for Effective Teaching **Location: D04**	**Workshop 3: Munesh Khamuani** Mentoring Made Easy: Practical Skills for Early Career Educators **Location: D05**	**Workshop 4: Sadia Khan** Anatomy Evolved - Old school Meets New Tech **Location: D06**	**Workshop 5: Natasha Noel-Barker & Dr. Rudi Billeter-Clark** Building the Body: Hands-On MSK Anatomy with DIY Skeletons **Location: D08**
16:00 - 21:00	**Socials**			
16:00 - 18:00	ECA Pub Quiz			**Johnson's Arms**

				59 Abbey St, Dunkirk, Nottingham NG7 2NZ
19:30 - 21:00	Dinner and Drinks			**Bella Italia** The Cornerhouse, Forman St, Nottingham NG1 4DB
Day 2: Tuesday 24th June, 2025				
09:00 – 09:30	Arrival and Registration opens Refreshments & Networking			A Floor, Main Foyer
	Workshops (Choose one)			
09:30 – 10:30	**Workshop 2: Naila Ali and Maria Chalasti** Simplifying Embryology: A Hands-On Workshop for Effective Teaching **Location: D04**	**Workshop 3: Munesh Khamuani** Mentoring Made Easy: Practical Skills for Early Career Educators **Location: D05**	**Workshop 4: Sadia Khan** Anatomy Evolved - Old school Meets New Tech **Location: D06**	**Workshop 5: Natasha Noel-Barker and Dr. Rudi Billeter-Clark** Building the Body: Hands-On MSK Anatomy with DIY Skeletons **Location: D08**
10:30 -11:30	Poster Presentation, Exhibition Visit, and Networking			D floor Foyer
11:30 -13:30	**Session 1: Collaborating and Integrating Disciplines** Chaired by Alex Impedovo and Munesh Khamuani			
11:30 – 11:35	**Welcome Talk:** Alex Impedovo (Conference co-chair)			Lecture theatre A03
11:35 – 12:05	**Invited Speaker: Prof Richard Wingate** Title: Knowing through making			
12:05 -12:10	***Valeria Vendries, University of Miami*** Incorporating Conjecture Mapping into Anatomy Education Design and Research: An Example in Neuroanatomy			
12:10 -12:15	***Jay F Roebuck, University College Dublin, Ireland*** The Iterative Prototyping of POCUS Cardiac Models through Student and Physician Feedback			
12:15 – 12:30	***Ashley Benge, University College Cork*** Guardians of Anatomy: Recognising the Vital Role of Technicians in Education, Donor Advocacy, and Clinical Training			
12:30 – 13:30	Lunch Break & Networking with Sponsors			A Floor, Main Foyer
13:30 -15:00	**Session 2: Connecting Generations: Looking ahead** Chaired by Nalia Ali & Maria Chalasti			
13:30 – 13:45	***Manal Khanzada, University of Nottingham*** The soft skills of socialisation: The role of student-run art societies within undergraduate anatomy education			Lecture theatre A03
13:45 – 13:50	***Irene Manjaly, University of Birmingham*** Evaluating the learning efficacy and perceptions of 3D-printed cranial structures in undergraduate anatomy education: a mixed methods study.			
13:50 – 14:00	**Sponsors' Talk: Purple Matrix**			
14:00 – 14:05	***Andreas Mikalef, University of Birmingham*** Implementation and Evaluation of a Novel Gamified Tool Utilising Generative Artificial Intelligence in Anatomy Teaching.			
14:05 – 14:20	***Muhammad Suhaib Shahid, University of Nottingham*** From Surface to Structure: AI-Driven Modelling for Dynamic Anatomy Education			
14:20 – 15:00	ECA Updates, Prizes, Handovers, Thanks & Close			

ECA 2025 Conference Committee

Conference Officer & Chair
Leia Boote (she/her)
Anatomy Teaching Prosector Manager, University of Nottingham

Deputy Conference Officer & Program Lead
Jemima Chukwu (she/her)
Anatomy Demonstrator, University of Birmingham

Conference Co-Chair & EDI Officer
Alex Impedovo (they/them)
Technical and Teaching Specialist in Anatomy, University of Nottingham

ECA Communications Officer and Social Media Lead
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Lecturer in Anatomy, University of Central Lancashire

Finance Officer/ECA Deputy Treasurer
Harry Miles (he/him)
Senior Teaching Fellow and Head of Anatomy
The Pears Cumbria School of Medicine

ECA President
Dr Jo Tomlinson (she/her)
Lecturer in Anatomy, University of Bristol

Local Committee at University of Nottingham

Naila Ali (she/her) *(Assistant Professor in Anatomy) - Abstracts & Workshops*

Dr Rudolf Billeter-Clark (he/him) (*Associate Professor in Anatomy*) - Workshops

Anthony Bright (he/him) *(Teaching Associate in Anatomy Education) - Planning & Quiz*

Maria Chalasti (they/she) *(Teaching Associate in Anatomy) – Abstracts & Workshops*

Dr Munesh Khamuani (he/him) *(Assistant Professor in Anatomy) - Abstract Lead & Workshops*

Dr Sadia Khan (she/her) (*Teaching Associate in Anatomy Education*) - Workshops

Dr Deb Merrick (she/her) *(Head of Anatomy) - Logistics & Planning*

Natasha Noel-Barker (she/her) *(Assistant Professor in Anatomy) – Student Volunteer Lead & Workshops*

Workshops

Workshop 1

Title:
Speaking bodies - Broad Language Beyond Anatomy

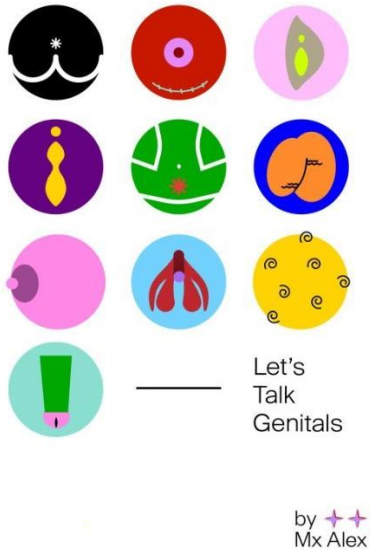
Workshop Lead:
Mx Alex Impedovo (they/them)
Technical and Teaching Specialist in Anatomy, University of Nottingham

<u>Workshop Description</u>:

"*Language constitutes our world, it doesn't just record it or label it*" - Daniel Chandler

Language shapes our reality including how we understand bodies—our own and others'.

This interactive workshop explores how the words we use when speaking about bodies can foster respect and belonging across diverse gender identities, sexualities, neurotypes, and access needs. Moving beyond binary and normative frameworks, we'll consider how language both reflects and reinforces power dynamics in anatomical discourse.



The main activity will engage participants in a hands-on "Broad Language Audit" of literary materials, where you'll identify exclusionary language and collaboratively reframe it. Together, we'll explore how even small shifts in wording can create interpersonal ecosystems that affirm and represent the full spectrum of human experience. Practical strategies and discussion will equip anatomists and non- to make meaningful changes in the social landscapes they populate.

Workshop 2

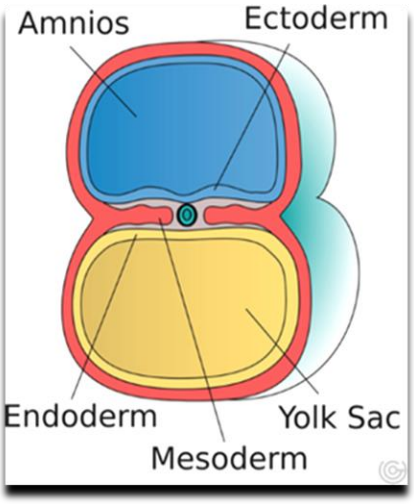
Title:
Simplifying Embryology: A Hands-On Workshop for Effective Teaching

Workshop Lead:
Naila Ali (she/her)
Assistant Professor in Anatomy, University of Nottingham

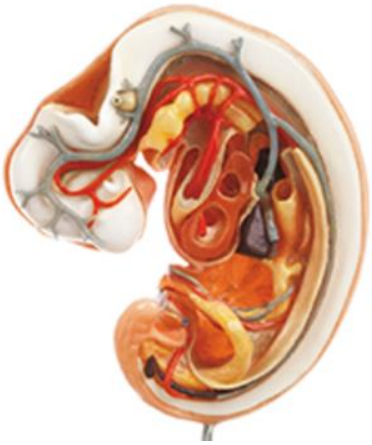
Maria Chalasti (they/she)
Teaching Associate, University of Nottingham

Workshop Description:

Do your students struggle with the complexity of layers and foldings in embryology?



This interactive approach will help you enhance your teaching strategies in simplifying and visualizing complex embryological processes. This workshop is designed to help you make your lessons more accessible and engaging, thus enabling your students to understand and retain intricate concepts.



In this hands-on workshop, you will begin by revisiting foundational concepts of germ layers and then move on to developing full term organs. You will be provided with a trilaminar embryonic disc and by using clay modelling techniques, you will develop it into a specific body structure of your choice, that be a full system or an individual component of the head and neck region.

Whether you choose to teach general embryology or focusing on normal or abnormal development of a specific body organ, this workshop will allow you to create an interactive and visually compelling representation of embryonic development.

Workshop 3

Title:
Mentoring Made Easy: Practical Skills for Early Career Educators

Workshop Lead:
Dr Munesh Khamuani (he/him)
Assistant Professor in Anatomy, University of Nottingham

Dr Muhammad Aasim Rasheed (he/him)
Assistant Professor, University of Nottingham

Workshop Description:
Are you an early career educator or someone looking to start a career in education?
Do you find yourself supervising, supporting, or coaching students and colleagues, but are unsure of how to approach those conversations effectively?

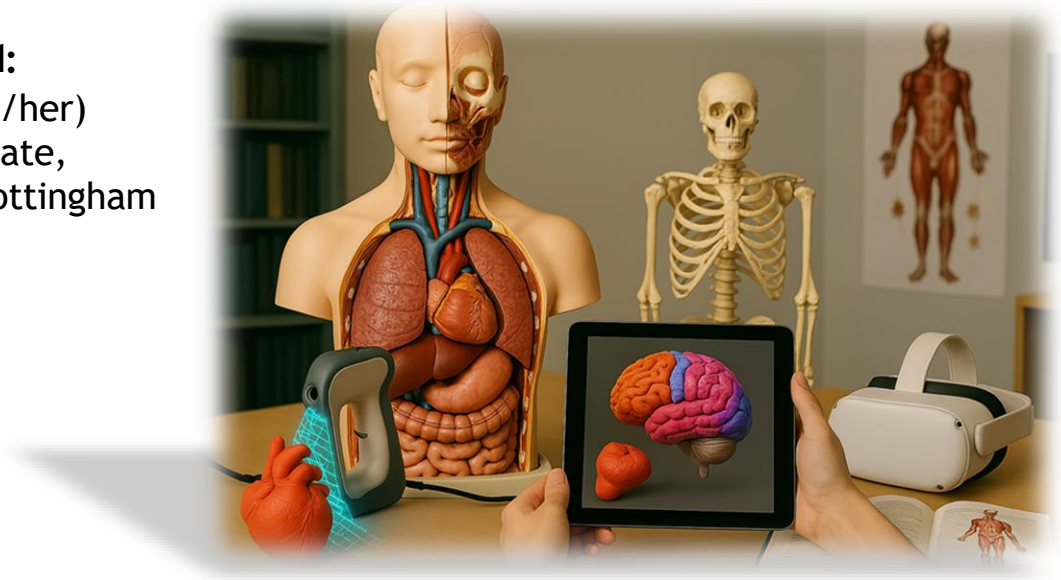
This hands-on workshop is designed to help you rethink how you engage in everyday conversations with your students, supervisees, or those you provide pastoral support to. In this practical, interactive session, you'll explore simple yet powerful strategies for having meaningful conversations that can leave a lasting positive impact on your mentee or supervisee. Whether you're managing a team, mentoring a student, or coaching a colleague, you'll walk away with tools and techniques that you can apply immediately to enhance your mentoring and supervisory approach.

This workshop is perfect for personal tutors, supervisors, and early career educators who are eager to develop their skills in facilitating productive, impactful, and supportive conversations in their day-to-day roles.

Workshop 4

Title:
Anatomy Evolved - Old School Meets New Tech

Workshop Lead:
Sadia Khan (she/her)
Teaching Associate,
University of Nottingham



Workshop Description:
Ever wondered how anatomy teaching has changed?

Join us for an engaging workshop where we explore the whole range of teaching tools! We will start with the classics - dissections, textbooks, and atlases - and then dive headfirst into the cool new stuff.

You will get to see how 3D scanning, modelling, and printing are changing how we visualise anatomy. Plus, you can experience the power of augmented and virtual reality in creating engaging and interactive learning environments.

In this workshop, you will learn how to effectively integrate a range of anatomical methods into your teaching practice. We will discuss the benefits and limitations of each method and learn strategies to maximise student engagement and comprehension. And best of all, you will get hands-on experience with 3D scanning, AR, and VR, so you can see firsthand how they can enhance anatomy education.

If you are ready to explore anatomy in a fresh way and try out the latest tech, this workshop is for you!

Workshop 5

Title:
Building the Body: Hands-On MSK Anatomy with DIY Skeleton

Workshop Lead:
Natasha Noel-Baker (she/her)
Assistant Professor in Anatomy, University of Nottingham

Dr Rudi Billeter-Clark (he/him)
Assistant Professor in Anatomy, University of Nottingham

Workshop Description:

Learning musculoskeletal anatomy can be challenging. This interactive workshop introduces a creative approach to teaching MSK through the construction of DIY skeletons, modelling, and muscle elastics!
This is a method we actively embed with our sport and exercise science students to support diverse learning needs, encourage engagement, and deepen anatomical understanding through embodied learning.

Participants will explore how tactile model-making can illuminate the orientation of structures, lines of force, and movement mechanics. You'll also have the opportunity to reflect and discuss how spatial awareness, and visual mapping can be scaffolded in your own teaching practice. Whether you're looking to diversify your teaching toolkit or better support visual and kinaesthetic learners, this session offers a dynamic, accessible strategy to make anatomy come alive.

Keynote Speakers

Keynote Speakers

Dr Yvonne Mbaki (she/her)

BSc (Biomedical Sciences), Msc (Neuroscience), PhD (Urology Pharmacology), SFHEA

Reader in Medical Education,
Queen Mary University of London

Collaborate to Elevate

In this talk, we will explore the impact of collaboration on improving teaching practices. It highlights the development of a toolkit created through partnership with diverse stakeholders across the faculty. Designed for early-career professionals, the session offers practical insights into starting and sustaining collaborations beyond departmental boundaries. We will also discuss how working together can support professional growth and development.

Professor Richard Wingate (he/him)

MAP, DPhil, SFHEA

Professor of Developmental Neurobiology,
Kings' College London.
MRC Centre for Neurodevelopmental Disorders
Director of Interdisciplinary Science Education,
Kings' College London
Editor-in-Chief at BrainFacts.org

Knowing Through Making

Prof Richard Wingate will discuss whether collaboration between science and creative practice can change research and teaching. He will discuss how engagement with artists in the anatomy department and dissecting room changed the way we think about anatomy, its teaching and how collaboration across disciplines can impact new research.

Cat Irving (she/her)

Human Remains Conservator,
Surgeons' Hall,
Edinburgh and Hunterian Museum,
Glasgow

Things in Jars: A Potted History of Fluid Preservation in Anatomical Collections

Cat Irving, Human Remains Conservator for Surgeons' Hall Museums will look at the different methods which have been used to preserve human remains for later study, why this was crucial to the development of medical understanding, and why these collections are still relevant today.

Cat Irving has been the Human Remains Conservator for Surgeons' Hall since 2015 and has been caring for anatomical and pathological museum collections for over twenty years. After a degree in Anatomical Science, she began removing brains and sewing up bodies at the Edinburgh City Mortuary. Following training in the care of wet tissue collections at the Royal College of Surgeons of England she worked with the preparations of William Hunter at the Hunterian Museum at Glasgow University, where she is now Consultant Human Remains Conservator. Cat is a licensed anatomist and gives regular talks on anatomy and medical history. She recently carried out conservation work on the skeleton of serial killer William Burke and has contributed a chapter to the Routledge Handbook of Museums, Heritage and death.

Oral and Bite-size Presentation Abstracts

1. Collaborative Practice in Anatomy – a case study surrounding the benefits of a co-teaching model in Higher Education.

Millie Patel and Thomas Williams

Hull York Medical School, University of Hull, Hull, United Kingdom.

hymp29@hyms.ac.uk, hytw13@hyms.ac.uk

Collaborative practice is well-documented in literature as a tool for better student engagement and active learning, with plenty of hidden curriculum benefits, including teamwork, interpersonal/interdisciplinary communication and relationships. Lack of timetabled space for collaboration or development of co-teaching leads to isolated, independent educators. Despite this, the number of case studies detailing co-teaching between educators is lacking. Here, we detail an example of successful collaborative practice in higher education by two Masters' level anatomists. This case study outlines the development of anatomy-based teaching sessions aimed at year one medical students. Co-teaching was used as a tool between colleagues to improve the quality of their teaching and, thus, grow as educators, providing a better learning experience for students. Co-teaching was utilised throughout all aspects of the design process, notably in splitting of workload, designing of resources, and peer-reviewing of work. The authors were supported by an experienced educator who was able to provide feedback and ensure quality throughout the process. Collaborative practice was also reflected in the session-design, as students were guided by multiple facilitators and were encouraged to utilise peer-teaching to support their own learning. Co-teaching leads to well-designed, engaging and informative sessions. Following the success of this case study, the authors collaborated on future sessions across multiple disciplines.

Keywords: Co-teaching, Anatomy Education, Educational Theory

2. The Impact of Navigation and Robotics in Adult Spinal Deformity Correction Surgery on Pedicle Screw Accuracy and Patient Outcomes: a Systematic Review.

Tereza Littova

University of Nottingham, Nottingham, UK

mzytl15@nottingham.ac.uk

This student-lead systematic review entailed teaching amongst medical-student peers following a cadaveric dissection of the back. The focus was surgical correction of adult spinal deformity (ASD) which has high complication rates, often due to pedicle screw (PS) inaccuracy arising from atypical anatomical landmarks during screw insertion. This review compares PS accuracy in the thoracic and lumbar spine using intraoperative navigation versus non-navigation techniques. Additionally, it assesses reoperation rates, screw repositioning, neurovascular complications, operation time, and blood loss between the two approaches. A systematic review following PRISMA guidelines involved a search of PubMed, Medline, and Nusearch in December 2024, yielding 470 records. After removing duplicates and screening, six studies met the inclusion criteria. These were critically appraised using Cochrane ROBVIS-I-V2 guidelines, and relevant data were extracted. A cadaveric prosection was generated to illustrate key anatomical structures, which was demonstrated to medical students to aid anatomy teaching. Intraoperative navigation demonstrated a 10.79% increase in PS accuracy compared to non-navigation methods. Thoracic screws were less accurate than lumbar screws despite navigation improving accuracy in both regions. The navigation group also had fewer neurovascular complications, reoperations, blood loss, and shorter operation times. Long-term patient outcome data remains under-researched, revealing a gap in current research. The review identified six studies, all non-randomized retrospective cohort studies, which may introduce bias from uncontrolled confounders. Future research should focus on long-term outcomes, cost-effectiveness, and the learning curve associated with navigation technology. Intraoperative navigation and robotic technologies show potential in improving PS accuracy and surgical outcomes for ASD correction.

Keywords: Spine, Innovation, Navigation

3. Embedding Equity, Diversity, and Inclusion in Anatomy: A Framework for Transformative Practice.

Leandros Rapteas

Human Anatomy Unit, University of Birmingham, Birmingham, United Kingdom

l.rapteas@bham.ac.uk

Anatomy education has historically marginalized, minoritised identities through biased visual representations, exclusionary terminology and resources, and androcentric content. This presentation introduces an Equity, Diversity, and Inclusion (EDI) framework developed through teaching, research, and public engagement projects. It aims to enhance representation in anatomy education and align pedagogy with social accountability. This framework was applied across a range of initiatives, including a summer project with University of Tours students, BSc Biomedical Science dissertations, and clinical service evaluation. Projects involved scrutinising anatomical worksheets for biased terminology and limited representation, exploring student and staff perceptions of representation in anatomical content, and creating diverse models of external genitalia to address underrepresentation. Students also investigated perceived gender and ethnicity bias in clinical education. In parallel, case studies and teaching visuals were revised to reflect intersectional identities across gender, ethnicity, and body type. Another strand focused on World Anatomy Day (WAD), using it as a platform for public engagement. This involved educating the public about the anatomy of pain in endometriosis, drawing attention to the historic neglect of female pain and reinforcing the social responsibility of anatomical sciences. Together, these initiatives form a sustainable, iterative EDI framework. By critically evaluating traditional anatomical norms and embedding inclusive pedagogies, anatomy education can foster belonging, support the development of culturally competent clinicians, and contribute to social change through public engagement. This presentation offers practical, replicable strategies for embedding meaningful EDI change in health sciences curricula.

Keywords: Equity, Diversity, and Inclusion (EDI), EDI Framework, Intersectionality.

4. Evolving Mortality Trends Among Anatomical Donors in Scotland: Adapting Anatomical Education to a Changing Population.

Xiwang Yu, Siobhan Cantley, and Paul M. Rea

University of Glasgow, Glasgow, Scotland

2663881Y@student.gla.ac.uk

Body donation provides vital educational value for medical students and is essential for sustaining anatomy teaching in the UK. However, the clinical and demographic characteristics of donors—and how these may change over time—are rarely examined in depth. This study presents a ten-year retrospective analysis of 848 donors accepted into the University of Glasgow's body donation programme between 2013 and 2023, with the aim of identifying mortality trends and their implications for anatomical education. Donor causes of death were anonymised and categorised into primary, secondary, and tertiary classifications. These were grouped into key categories, including cancer, non-contagious infection, cardiovascular disease, neurological disorders, respiratory disease, renal failure, and age-related frailty. Analyses were conducted using RStudio to generate descriptive statistics and data visualisations. Non-contagious infection was the most common primary cause (26.5%), followed by cancer (22.3%) and cardiovascular disease (19.3%). Secondary causes more frequently included neurological conditions (15.9%) and respiratory disease (9.9%). Frailty of old age became more prominent in secondary and tertiary roles, indicating an increasingly elderly donor population with complex comorbidities. Nearly half of all donors had no recorded third cause of death. These findings highlight changes in donor health profiles and their relevance to anatomical teaching, including specimen handling, curriculum design, and donor programme planning. The study also demonstrates the value of long-term donation data in developing sustainable, ethically grounded educational strategies.

Keywords: Body donation program, Donor demographics, Anatomical education

Ethics statement:
Ethical approval was not required for this retrospective fully anonymised dataset, which complied with the Anatomy Act 1984 and the Human Tissue (Scotland) Act 2006.

5. Furthering Anatomical Understanding Through the Process of Dissection, Prosection and Digital Illustration: A Reflective Account from a Medical Student.

Alex Whitworth

Brighton and Sussex Medical School, Anatomy Department, Brighton, UK

Alexwhitworth6@gmail.com

This reflective piece explores the educational value of moving from passive observation to active engagement in anatomical learning, particularly through the stages of dissection, prosection, and digital illustration. As a medical student, I have been fortunate to have dissection integrated into my curriculum, and over the summer, I had the opportunity to undertake a prosection project on an area of my choosing. Creating this prosection needed detailed, focused work, which allowed me to develop a much deeper understanding of the anatomy beyond rote memorisation. It became clear to me that the process of learning anatomical knowledge actively—through dissection and planning my prosection —offered far greater understanding than passive study. Building on this, I created digital illustrations of my prosection and the act of translating my work into two-dimensional images reinforced my spatial understanding. This project reflects principles of constructivist learning. I worked independently and had access to expert support when needed. Although initially daunting, this autonomy proved empowering. I believe such an approach not only could enhance an individual's understanding but also increases the pool of prosections and illustrations available for future students. Moreover, providing students with similar opportunities could inspire professional interest in anatomy, potentially guiding more of us toward a career in the field. In addition to the anatomical knowledge I gained, I also developed practical skills in prosection and digital illustration. Through this, I have come to appreciate the ability and patience required of prosectors and medical illustrators.

Keywords: Dissection, medical education, anatomy

6. 3D printed facial electronic simulator for injectables in aesthetic medicine.

Sindy Melissa Sánchez Romo, Rodrigo Enrique Elizondo Omaña, Adrián Manuel Verdines Pérez

Autónoma de Nuevo León, Monterrey, Nuevo León, Mexico

sindy.melissa@hotmail.com

This project presents an innovative electronic facial anatomical simulator designed for aesthetic medicine training, using 3D printing technology. The simulator is made from PLA material, incorporates copper tape sensors to detect accidental contact with facial arteries during injections, and features a silicone skin cover to enhance realistic tactile simulation. The main objective was to develop a facial anatomical model for practicing injectable procedures safely. The materials and methods section outlines the creation process, including the choice of PLA for durability and cost-effectiveness, the integration of copper tape sensors to detect arterial contact, and the use of silicone for skin simulation. Two experienced aesthetic physicians tested the simulator and provided valuable feedback on its functionality. Results indicated that the simulator was well-received by the physicians, who emphasized its potential to improve technique, reduce the risk of vascular injuries, and enhance safety during facial injections. The realistic simulation provided by the silicone cover and sensor responsiveness were particularly appreciated for making the training more immersive. In the discussion, the findings highlight the simulator's role in improving training quality and boosting physician confidence before performing procedures on real patients. In conclusion, this electronic facial anatomical simulator represents a significant advancement in aesthetic medicine training. Further research and development are recommended to refine its capabilities for broader use in medical education.

Keywords: Simulation, facial, injectables.

7. Incorporating Conjecture Mapping into Anatomy Education Design and Research: An Example in Neuroanatomy.

Valeria Vendries

Department of Teaching and Learning, School of Education and Human Development, University of Miami, Coral Gables, Florida, 33146, USA

Vxv837@miami.edu

X: @ValeriaVendries

Anatomy education, a rapidly evolving field, frequently involves designing various instructional elements, such as learning environments, lessons, assessments, and resources with and without technology enhancement. These designs aim to enhance student understanding, motivation, engagement, visualization, or other facets of learning and instruction. Anatomy education researchers seek to determine the effectiveness of these designs, typically through experimental methodologies like pre-post tests or randomized controlled trials. While such experiments may provide insights into intervention effectiveness, they often fail to identify the specific elements of the design that contribute to productive learning. Viewing anatomy education as a dynamic design space, this presentation explores Conjecture Mapping, an approach to systematic educational design research from the learning sciences proposed by Sandoval (2014), and showcases its applicability in anatomy education research. Our conceptualizations of educational interventions or features are shaped by our ideas of how learning occurs and can be facilitated. Conjecture Mapping offers a framework for researchers to articulate these ideas explicitly in advance, externalize the specific features of the design, their intended functions, the interactions among these features, and their expected [learning] outcomes. This framework suggests that by specifying these conjectures beforehand, researchers can empirically test their predictions (Sandoval, 2014). This presentation will introduce the principles of Conjecture Mapping, followed by an example from the author's research. The example focuses on a lesson plan within the context of neuroanatomy, specifically learning about brain sectional anatomy. This will illustrate how Conjecture Mapping was utilized in the conceptualization, empirical evaluation, and subsequent refinement of the design.

Keywords: Conjecture-mapping, Design-based research, Anatomy education

Ethics Statement:
Ethical approval was obtained from the Institutional Review Board (ID: 20240384)

8. The Iterative Prototyping of POCUS Cardiac Models through Student and Physician Feedback.

Jay F Roebuck[1], Laura Gorman[1], Christian Myles[1], Lucy Mckenna[1], Tomas Breslin[2] and James FX Jones[1]

[1]School of Medicine., University College Dublin, Ireland,
[2]Emergency Department, The Mater Hospital Dublin, Ireland

jayfroebuck@outlook.com

Ultrasound is a non-invasive, non-ionising, live-imaging technology capable of unique imaging views through handheld-probe manipulation. Advances in portability and affordability have led to the rise of Point of Care Ultrasound (POCUS), techniques to support clinicians in bedside examination. POCUS has spread across hospital departments and into undergraduate medical education, creating a demand for sonographic education tools. A cardiac model from ThingiverseTM by Mvetto was edited to demonstrate the key POCUS views: the parasternal long axis (PLAX), parasternal short axis and apical 4-chamber. Following feedback, the Heart model was improved to facilitate probe placement and spatial orientation. A partial ribcage was added from the BodyParts3D database of MRI-derived digital anatomy models. A digital probe was modelled from ButterflyTM probes. The In-situ Heart model is a composite of the probe, ribcage and original Heart model. Educational trials were conducted to compare the efficacy of the original (Heart) and improved (In-situ) models. After a brief introduction to ultrasound interpretation and a demonstration of PLAX imaging, students completed 4 short answer questions on a PLAX sonographic image. The Heart trials showed no significant difference between scores of students with or without models (Mann-Whitney, $p=0.3520$, $n= 112$). The In-situ trials showed significant difference between student scores without the models and after model intervention (Wilcoxon, $p<0.0001$, $n=92$). Thus, this study demonstrates the development of an educational model through the process of iterative prototyping alongside student and physician feedback or trialling.

Keywords: 3D printing, ultrasound, Education

Ethics Statement:
Ethical approval for a low-risk study was given by the UCD HREC with reference: LS-C-24-189-Roebuck-Jones.

9. Guardians of Anatomy: Recognising the Vital Role of Technicians in Education, Donor Advocacy, and Clinical Training

Ashley Benge

University College Cork, Cork, Ireland

Abenge@ucc.ie

Technical officers have been an essential, though often overlooked, pillar of anatomy education for generations. Their contributions extend far beyond laboratory maintenance to include specialized skills in anatomical preparation, health and safety, curriculum support, and the ethical stewardship of human donor programs. Throughout history, technicians have served as custodians of anatomical knowledge, adapting to evolving educational methods while maintaining the highest standards of respect for human donors. Today, their role is increasingly interdisciplinary: technical staff collaborate closely not only with academic teams but also with clinicians, surgeons, and industry partners to support professional training, surgical education, and innovation. The COVID-19 pandemic further demonstrated the critical role of technical staff in adapting anatomy education to unprecedented challenges — modifying laboratory spaces, implementing new safety protocols, supporting remote and hybrid learning solutions, and ensuring the continuation of essential clinical training. Much of this foundational work was carried out behind the scenes by technicians, reflecting the profession's resilience, expertise, and responsiveness to evolving educational needs. This presentation highlights the multifaceted role of technicians in modern anatomy education — from specimen preservation and donor advocacy to their active involvement in clinical skills training and professional development. Technicians bridge disciplines, fostering collaboration between academic, technical, and healthcare sectors to deliver a respectful, sustainable, and enriching learning environment. By showcasing the historical and ongoing contributions of technical staff, this work calls for greater recognition, professional development, and inclusion of technicians as key partners in anatomy and clinical education. Elevating their voices is vital to the future of teaching, healthcare collaboration, and to honouring the generosity of those who donate their bodies for learning.

Keywords: Technicians in Anatomy Education, Donor Advocacy, Interdisciplinary collaboration.

Ethics Statement:

This research has been conducted on human cadavers from the University College Cork Anatomical Donor Program. All donors in the program have consented to the use of their bodies for medical education, research, and training in accordance with the Anatomy Act and in line with the Irish Medical Council Guidelines.

10. The soft skills of socialization: The role of student-run art societies within undergraduate anatomy education.

Jessica Armitage[1], Manal Khanzada[1], Caed Whittle[2]

[1]University of Nottingham Medical School, Nottingham, United Kingdom
[2]Nottingham University Hospitals NHS Trust, Nottingham, United Kingdom

caed.whittle4@nhs.net

Art has been integrated in various ways to enhance anatomy education, such as partnerships between medical schools and art galleries, student electives, or body painting techniques incorporated into anatomy teaching. One interpretation of the advantages of incorporating art into anatomical education links observational skills and spatial reasoning. Another view emphasises art in the development of skills relevant to student's socialisation into the professional role of a doctor – such as empathy, communication skills and learning a relationship with the human body. No study to date has specifically explored the role of peer-led, anatomy art sessions within this landscape. We present the results of a qualitative study which explores medical student's experiences and perceptions of attending art sessions organised by the Derby Anatomy Art Society (DAAS). Semi-structured interviews were conducted with 6 medical students across 3 cohorts who had all attended ≥3 DAAS sessions. Their experiences of the strengths and weaknesses of these peer-led sessions in relation to their anatomical education were then examined formally using Interpretive Phenomenological Analysis. Three major themes emerged: (1) Preconceptions of learning anatomy, (2) Visuospatial development and (3) Student wellbeing. Peer-led anatomical art sessions represent a novel, effective and cost-neutral complimentary resource for reinforcing traditional methods. Students perceive a benefit in having an inclusive, non-judgemental and non-hierarchical environment to revise anatomical concepts and develop their visuospatial reasoning. These sessions also model behaviours which are protective against medical student (and future physician) burnout such as mindfulness, or deepening a sense of community.

Keywords: Art, Interpretive Phenomenological Analysis, Anatomy education

Ethics Statement:

REC Refence Number: FMHS 364-0923

11. Evaluating the learning efficacy and perceptions of 3D-printed cranial structures in undergraduate anatomy education: a mixed method study.

Irene Manjaly[1], Asmita Goswami[1], Luisa Leiss[1], Vanessa Nhara[2], James White[1]

[1]Human Anatomy Unit, University of Birmingham, United Kingdom.
[2]Kent and Medway Medical School, University of Kent, United Kingdom.

irenebraslin@gmail.com

Anatomical education is dynamic and everchanging, with the advent of three-dimensional printed models (3DPM) offering an innovative substitute. This mixed-methods study investigated the perceptions of students and staff at University of Birmingham (UoB) in integrating in-house printed 3D sphenoid models into small group teaching (SGT) sessions. A total of 245 out of 425 First-year students enrolled in the UoB MBChB programme, and nine staff members completed a Likert-scale questionnaire following interaction with 3D printed sphenoid models. Additionally, using 3D scans and MRI data, hydrocephalus and brain ventricle 3DPMs were generated and their effect on learning was compared to real bony specimens. To achieve this, 12 first- and second-year volunteers were randomised into three groups for a controlled trial involving 3DPMs, bony specimens and a combination. Knowledge retention was assessed by a pre-session and a post-session test. Responses from the sphenoid model Likert questionnaire were overwhelmingly positive (90.2% of students), highlighting enhanced visualisation and educational value. Students and staff agreed that 3DPMs should complement real specimens. All groups from the trial showed improved test scores, with the 3DPM group demonstrating the greatest average improvement (4.38). Albeit the differences were not statistically significant. Overall, this study confirms the value of 3DPMs in settings when traditional materials are limited if implemented effectively, whilst reinforcing the importance of multimodal learning approaches in anatomy at UoB. Additionally, it also highlighted the benefits of incorporation of 3DPMs generated from MRI data and 3D scans of pathological specimens into teaching at UoB.

Keywords: 3D Printed Models (3DPM), Undergraduate Anatomy, Cranial Structures

Ethics Statement:
Ethical approval was granted by the School of Biomedical Science Ethics Committee of the College of Medical and Dental Sciences (UoB). The Ethics Committee reference number is BMSRP_2025_Lab044.

12. Implementation and Evaluation of a Novel Gamified Tool Utilising Generative Artificial Intelligence in Anatomy Teaching.

Andreas Mikalef, Jemima A. Chukwu and James White

Human Anatomy Unit, University of Birmingham, United Kingdom

j.white.6@bham.ac.uk

Generative artificial intelligence (GenAI) has emerged as a technology which has altered how teaching and learning take place. This study aimed to use GenAI in a targeted manner to create a user interface for an anatomy teaching resource incorporating principles of gamification. Two web-based anatomy quizzes were created using HTML5, JavaScript, and ChatGPT-4. The first intro quiz was embedded into the first activity of an anatomy practical session, and the second outro quiz was embedded into the final activity of the same anatomy practical for 1st Year MBChB at University of Birmingham (UoB). The quizzes included anatomical images for which students had to identify labelled structures through a multiple-choice answer format. Students were invited to complete post-session survey comprising Likert-scale statements, open-text questions and self-reporting of quizzes scores. Scores were analysed using the Wilcoxon Signed-Rank Test. Open-text responses were analysed using content analysis. Of the 425 enrolled medical students, 200 completed the survey. Outro quiz scores were significantly higher ($p < 0.0001$) versus intro quiz scores. Likert-scale responses and content analysis demonstrated that students found the quizzes engaging and they reported the quizzes as having enhanced their understanding. Several open-text responses included suggestions for improvements such as providing more detailed student feedback, diversifying the style of questions, and incorporating quizzes like this across the curriculum. This study demonstrates an additional value for GenAI in anatomy education in creating code for the design of gamified teaching resources. These findings will help inform future incorporation of GenAI into anatomy teaching at UoB.

Keywords: Generative AI, anatomy education, gamified learning.

Ethics statement:
Ethical approval was granted by the University of Birmingham
(Ref: BMSRP_2025_EDU12), with informed consent obtained and data handled in line with institutional protocols.

13. From Surface to Structure: AI-Driven Modelling for Dynamic Anatomy Education.

Muhammad Suhaib Shahid[1,2], Ceridwen Ellis[2]

[1]School of Computer Science, University of Nottingham, NG8 1BB, United Kingdom.

[2]School of Medicine, University of Nottingham, NG7 2UH, United Kingdom.

Muhammad.Shahid@nottingham.ac.uk

We present a novel approach to anatomy education that supports the transition from dissection-based learning to technology-assisted methods. Our work introduces the use of External-to-Internal Correlation Modelling (E2ICM), a deep learning technique developed to predict internal anatomical structures, initially within the oral cavity, based on external views. Using paired datasets of dynamic facial recordings and real-time MRI of the vocal tract during speech, we have trained a model capable of estimating internal configurations from the external view alone. This approach enables students to visualise internal oral anatomy dynamically by recording a short video of their face using a smartphone or similar device. The model generates an internal view of the vocal tract, which has the potential to be explored through interactive platforms such as virtual or augmented reality. These personalised, dynamic representations support engagement, reinforce anatomical understanding, and offer an accessible alternative to static images or traditional dissection. Visualisations aim to support 3D rendering, adding a tactile dimension to learning. Although currently focused on the vocal tract, the broader principle of correlating external motion with internal anatomical structures has the potential to be extended to other regions of the body. For instance, pairing video with ultrasound or CT could allow for the modelling of joints, the thorax, or the abdomen, contributing to a wider educational resource for dynamic anatomy. This work aligns with evolving pedagogical needs by offering a scalable, inclusive, and practical solution that enhances the accessibility and sustainability of anatomical teaching.

Keywords: Deep learning, Anatomical education, External-to-internal Correlation Modelling.

Ethical Statement:
Ethics Reference Number: FMHS 198-0524 (University of Nottingham).

Poster Presentation Abstracts

P1. Bridging Boundaries in Anatomy Education: Reflections on Co-Teaching and Student-Led Collaboration in Undergraduate Medical Training.

Jitendra Singh Yadav

Northumbria University, Newcastle upon Tyne, United Kingdom

jitendra21.uk@gmail.com

As an anatomy demonstrator actively engaged in undergraduate medical education, I've had the opportunity to contribute to a more collaborative, integrated approach to teaching in line with the evolving vision of the National Medical Commission of India. After completing training in medical education, I worked closely with a multidisciplinary team at the institutional level to design and implement a number of innovative teaching strategies aimed at enhancing student engagement and bridging the gap between departments, faculty, support staff, and learners. One key initiative involved integrating anatomy teaching both vertically and horizontally with other medical disciplines. At the beginning of each academic year, we planned the academic calendar to align anatomical topics with relevant content from clinical departments, inviting specialists to co-deliver sessions. In parallel, we encouraged students to present topics that spanned anatomy, physiology, and biochemistry, supported by faculty and staff from each department. Another major component was the introduction of Self-Directed Learning (SDL) within dissection and demonstration sessions. Students were given specific topics alongside relevant specimens or models and worked in small groups to explore and discuss their learning under faculty guidance. Additionally, I introduced the Jigsaw method—a structured, discussion-based activity where students sat in concentric circles and collaborated on various components of a topic, guided by a facilitator. These approaches were not only well-received by students but also fostered a more inclusive, interactive environment where faculty, technicians, and students worked as partners in the learning process. Feedback was overwhelmingly positive, academic performance improved, and several of these initiatives have since been adopted by other medical institutions.

Keywords: Co-teaching, Collaborative learning, Anatomy education

P2. Creating inclusive perineal anatomy models using 3D-printing and wax modelling techniques.

Abdul Ahmad, Asmita Goswami, Montserrat Rayman Silva, Leandros Rapteas

University of Birmingham, Birmingham, United Kingdom

l.rapteas@bham.ac.uk

Anatomical education has historically lacked representation of gender- and sex-diverse bodies, limiting student understanding of diversity in bodies. This project aimed to (1) develop models of the cisgender female, transgender female, and intersex perineum, and (2) design an autonomous learning session to promote engagement with underrepresented anatomies. Over a four-week period, nine hybrid anatomical models were created using a combination of 3D printing and wax sculpting techniques. A digital model of the bony pelvis was sourced from Sketchfab, modified in Tinkercad to retain perineal structures and incorporate the perineal membrane, and printed using BCN3D Epsilon printers. External genitalia were sculpted in terracotta and white wax, then painted to represent a range of skin tones. The final collection included four cisgender, two transgender, and three intersex models, each depicting variations in anatomical structures such as the clitoris, labia, and superficial perineal pouch structures commonly seen post-vaginoplasty or in intersex presentations. Supplementary resources—including labelled sketches, case studies, and explanations of terminology—accompanied the models to support self-directed learning. Survey responses from a self-selected sample of twenty-seven participants (students n = 19, staff n = 8) indicated that the models improved understanding of anatomy, provided inclusive representation of intersex and transgender bodies, and should be integrated more broadly into medical education. This project demonstrates how combining 3D printing and wax modelling can enhance representation of diversity in anatomy education and promote inclusive and reflective learning.

Keywords: Sex and Gender Diversity, Hybrid 3D Printing/wax modelling, Perineum

Ethics statement:
Ethical approval was granted by the Department of Biomedical Sciences Ethics Committee (Ref: BMSRP_EDU015).

P3. Exploring student perceptions of underrepresented bodies in anatomy education using 3D printing and wax modelling.

Abdul Ahmad, Asmita Goswami, Montserrat Rayman Silva, Leandros Rapteas

University of Birmingham, Birmingham, United Kingdom

l.rapteas@bham.ac.uk

The underrepresentation of cisgender female, transgender female, and intersex bodies in anatomical education limits inclusivity and can affect clinical competence and equitable care. This study explored how hybrid 3D-printed wax models and sketches showing variations in internal and external genital anatomy could improve knowledge, confidence, and views on inclusivity among medical students and anatomy teaching staff. An interactive session was delivered to 19 second-year MBChB students and 8 staff members at the University of Birmingham. Participants completed pre- and post-session surveys with Likert-scale and open-ended questions assessing confidence, comfort, and perceptions of the curriculum. Before the session, students reported high confidence in cisgender anatomy but significantly lower confidence in transgender and intersex anatomy ($p < 0.01$), with no significant differences in comfort. Staff also reported lower confidence and comfort with teaching transgender and intersex anatomy compared to cisgender anatomy, with some differences reaching significance ($p < 0.05$). Post-session, both groups showed improved confidence and comfort, though most changes were not statistically significant. However, staff showed a significant increase in confidence related to intersex anatomy ($p < 0.05$), suggesting targeted impact. Both students and staff supported using inclusive anatomical models in education and highlighted gaps in current curricula, especially in representing anatomical diversity beyond the gender binary. This study shows that inclusive anatomical resources can enhance confidence and raise awareness of curriculum limitations. Integrating such tools into medical education offers a practical way to support gender- and sex-inclusive healthcare training.

Keywords: Inclusive Anatomy Education, 3D-printed Anatomical models, Sex and Gender Diversity.

Ethics statement:
University of Birmingham BMS Ethics Committee (Ref: BMSRP_EDU015).

P4. Medical Students' Perceptions of Gender and Ethnic Bias in Pain Management: A Mixed Methods Study.

Seema Sandhu[1], Karuna Katti[2], Seyedeh Shahrzad Mirza Torabi[1,3], Leandros Rapteas[1]

[1]Human Anatomy Unit, University of Birmingham, United Kingdom.
[2]Lancaster Medical School, Faculty of Health and Medicine, Lancaster University.
[3]University of Bristol

l.rapteas@bham.ac.uk

Disparities in pain management based on gender and ethnic background have been extensively studied; however, there is limited exploration of medical students' perceptions of these biases, particularly in relation to their demographic characteristics. This cross-sectional mixed methods study hypothesised that medical students, especially those from marginalised backgrounds, will recognise gender and ethnic bias. A questionnaire was constructed with Likert scale items to quantify the participants' perceptions, while open-ended questions and follow-up interviews provided qualitative insights. The pilot cohort consisted of 22 medical students from years one to three at the University of Birmingham. Results indicate that students do perceive instances of gender and ethnic bias separately, but not their intersection, revealing a gap between their self-reported confidence and the actual frequency of observed bias. A significant gender disparity emerged: Medical students observed that female patients had to advocate more strongly for pain medication than males ($p = 0.0036$). In contrast to this, no significant differences were detected in treatment observations. Furthermore, no clear pattern emerged regarding the impact of student ethnicity or gender on their ability to detect or report bias. This implies systemic biases are internalised across all demographic groups. These preliminary findings indicate the need for a larger-scale study. Further research into structural and educational reforms are required to enhance intersectional and implicit bias recognition, empower students to report discrimination and advance truly equitable patient care.

Keywords: Intersectional bias, Medical students' perceptions, pain management disparities.

Ethics statement:
Approval was granted in March 2025 by the Department of Biomedical Science Ethics Committee, University of Birmingham (Reference Number: BMSRP_2025_EDU17)

P5. Investigating Medical Students' Perceptions of Gender Bias in Clinical Pain Management Observation.

Bethan White[1], Karuna Katti[2], Seyedeh Shahrzad Mirza Torabi[1,3], Leandros Rapteas[1]

[1]Human Anatomy Unit, University of Birmingham, United Kingdom.
[2]Lancaster Medical School, Faculty of Health and Medicine, Lancaster University.
[3]University of Bristol

l.rapteas@bham.ac.uk

Gender bias in pain management can impair diagnosis and treatment, often leading to the psychologisation and undertreatment of women's pain. While policies promote equitable care, little is known about how early-stage medical students perceive and internalise such biases. This study aimed to quantify perceptions of gender differences in pain management among first-, second- and third-year medical students, explore how biases are observed in practice, and evaluate perceived curriculum adequacy. In this mixed-methods pilot, 22 medical students completed a 17-item paired-Likert survey, six open-ended reflections, and three semi-structured interviews. Wilcoxon signed-rank tests compared mirrored male and female pain scenarios, while thematic analysis was applied to qualitative data. Students agreed that women's pain is more often attributed to psychological causes ($p=0.0078$) and that women must advocate more strongly for analgesia than men ($p=0.0027$). Only 14% felt prepared by the curriculum to address gender bias, while 91% called for further training. Although 55% reported confidence in identifying bias, interviews revealed that power dynamics created hesitancy in challenging clinicians. Students recognised gender disparities in pain management but felt underprepared to address them due to limited formal training. Findings support the integration of interactive, bias-focused education into the medical curriculum, development of longitudinal tools to track bias awareness, inclusion of diverse patient scenarios, and the creation of an NHS audit tool to identify and reduce clinical gender bias. These measures are essential to promoting equitable, patient-centred care.

Keywords: Gender bias in healthcare, Medical student perceptions, Pain management disparities.

Ethics statement:
Approval was granted in March 2025 by the Department of Biomedical Science Ethics Committee, University of Birmingham (Reference Number: BMSRP_2025_EDU17)

P6. Assessing the Effectiveness of AI Vision Models in Generating Alt Text for Anatomical Images.

Abimbola Openifoluwa Naomi, Falana

Department of Biomedical Sciences, City, St George's University of London, United Kingdom

Abimbolafalana999@gmail.com; M2101102@sgul.ac.uk

Recent advancements have introduced modern tools and techniques studying anatomy, including the integration of multimodal artificial intelligence (AI) models such as Gemini. Academic institutions, such as universities, have increasingly adopted the use of AI models for diverse applications. This study aims to assess the capability of current AI vision models to generate accurate alternative (alt) text descriptions for anatomical images, with a focus on enhancing accessibility for visually impaired students. AI vision models can generate alt text descriptions for anatomical images that are comparable in accuracy and quality to those produced by expert anatomists. However, expert-generated descriptions will be rated slightly higher overall, and participants will demonstrate varying ability to distinguish between AI- and expert-generated descriptions. The survey featured 12 anatomical images in a randomized order, with two corresponding questions per image. Survey responses were collected and subjected to statistical analysis. As an incentive, participants were given the opportunity to complete an additional survey for a chance to win one of twenty £10 Amazon vouchers. The data analysis revealed no statistically significant difference in the ratings by participants between the alt text descriptions generated by AI models and those produced by anatomy experts. The findings suggest that AI-generated alt text descriptions are accurate and viable alternatives to those written by expert anatomists.

Keywords: Artificial Intelligence, Anatomy Education, Accessibility.

Ethics statement:
The Research Ethics and Integrity Officer has reviewed the above application on behalf of the St George's Research Ethics Committee (SGREC). I am pleased to inform you that your application has been approved and a favourable ethical opinion of your project has been given, based on the information provided in the self-assessment form, study protocol and supporting documentation. Please note that this is subject to the post-approval condition and requirement specified on the following page. Ethical approval is valid for 5 years from the date of this letter (subject to the submission of any amendments). REC reference: 2025.0026

P7. Exploration of the Perceptions of Healthcare Students Towards Using Virtual Reality to Learn Heart Anatomy: A Multi-Institutional Study.

Hannah Lee[1,2], Sarah Alturkustani[1], Dr Audrey MK Dempsey[2], Prof. Kieran W. McDermott[2], Aisling Corbett[2], Dr Siobhain Mary O'Mahony[1], Dearbhla Cullinane[3], Ashley Durfee[3], Dr Denis Barry[3], Dr. Andrea Factor[1], Dr. Mutahira Lone[1].

[1]Department of Anatomy and Neuroscience, University College Cork, Cork, Ireland.
[2]School of Medicine, University of Limerick, Limerick, Ireland.
[3]Discipline of Anatomy, School of Medicine, Trinity College Dublin, Dublin, Ireland.

hannah.lee@ul.ie

Anatomy is a fundamental subject for healthcare students and plays a crucial role in shaping their future knowledge and skills as healthcare professionals. Anatomy requires spatial and visual understanding and thus relies on the teaching modality to communicate this. Virtual reality (VR) has emerged as a tool to complement traditional methods, however research into student perceptions of VR for learning heart anatomy remains limited. This study aims to address this by evaluating student acceptance of VR to learn heart anatomy. A cross-sectional study was conducted across three Irish institutions with 221 medical and 38 dental students participating in a VR-based learning session. A pre-questionnaire documented participant educational background, demographics, prior VR experience, and self-perceived anatomy comprehension. The post-questionnaire documented student acceptance of VR using the Technological Acceptance Model (TAM), self-perceived change in heart anatomy comprehension using a Likert scale, and short-answer questions to gather qualitative feedback. Results indicate that VR was highly accepted across institutions. Self-perceived anatomy comprehension improved significantly in two of the three institutions. The TAM analysis revealed that enjoyment and perceived usefulness were the strongest predictors of future intention to use VR. Qualitative analysis reinforced this with participants reporting that it aided structure visualisation and improved learning engagement. VR has the potential to improve student enjoyment and understanding of heart anatomy, however, feedback also shows that it is recommended as a supplementary tool and should not replace existing resources.

Keywords: Virtual Reality, Anatomy Learning, Student Acceptance/Perception.

Ethics statement: Approved by Social Research Ethics Committee (SREC) University College Cork (reference code Log 2023-273; lead institute), Faculty of Health Sciences Research Ethics Committee (FHS-REC) Trinity College Dublin (reference code 240204), and from Faculty of Education and Health Sciences Research Ethics Committee in University of Limerick (2023_12_19_EHS).

P8. Gender Bias in Anatomy Teaching: Perceptions of Representation and Inclusivity in the University of Birmingham's RED Curriculum

Emily Hall[1], Genevieve E Melling[1], Karuna Katti[2], Leandros Rapteas[1]

[1]Human Anatomy Unit, Department of Biomedical Sciences, University of Birmingham.

[2]Lancaster Medical School, Faculty of Health and Medicine, Lancaster University.

Exh267@student.bham.ac.uk

Gender bias in medical education, particularly in anatomy teaching, remains a longstanding issue, with male anatomy receiving greater emphasis than female anatomy. This study aimed to investigate the perceptions of students and staff at the University of Birmingham regarding the representation of male and female anatomy in the second-year RED (Reproduction, Endocrinology, and Development) curriculum. A mixed-methods approach was employed using two surveys: one for second-year medical students and one for anatomy staff. Both surveys explored content adequacy, representation, and inclusivity in teaching resources, and identified barriers in teaching male and female reproductive anatomy. Results from 28 student and 10 staff responses indicated significant disparities, with male external genitalia taught in greater detail. Female students expressed a stronger need for comprehensive teaching of female reproductive anatomy, especially external genitalia, which was underrepresented. Staff reported discomfort and a lack of confidence in teaching female and intersex anatomy, citing insufficient training and cultural barriers. These findings highlight the ongoing gender bias in medical education, pointing to the need for curriculum revision, enhanced staff training, and more inclusive resources. Future research should explore the intersectionality of gender, race, and other social factors in anatomy education, and assess the impact of revised teaching methods on student learning outcomes and perceptions of inclusivity.

Keywords: Gender Bias, Anatomy Education, Inclusivity.

Ethical Statement: The study received ethical approval from the Department of Biomedical Science Ethics Committee at the University of Birmingham (reference number: BMSRP_2025_EDU014).

P9. Investigating- Variation in the Auriculotemporal Nerve and distances Between Auriculotemporal Nerve and Related Structure.

Achiraya Kittiboonya, Seaneen McDougall, Manah Changmai

University of Dundee, School of Science and Engineering, United Kingdom

2588636@dundee.ac.uk; angieachi27@gmail.com

The auriculotemporal nerve (ATN) is a nerve of the head and neck region that originates from the mandibular division of trigeminal nerve (CNV). It provides sensory innervation to the temporal region, auricle, and the temporomandibular joint and provides the parasympathetic and vasomotor fibers to the parotid gland. ATN runs along the superficial temporal vessels that are located at the superior aspect of the parotid gland and run along with the auriculotemporal nerve. However, the location of the ATN and its relationship to structures can vary that cause variations among the location of ATN. Additionally, studies have pointed out that ATN is identified as one of the peripheral trigger sites for migraine and auriculotemporal neuralgia can be compression of ATN by closely related structures including superficial temporal vessels or the temporomandibular joint. Additionally, iatrogenic damage of the ATN during a parotidectomy can cause Frey syndrome. The aim of this study is to describe the patterns of relationships between ATN formation in the infratemporal fossa and patterns of ATN and superficial temporal vessels in the temporal region, in a Scottish Thiel-embalmed cadaver population and to determine if these patterns can be reliably used to locate the ATN without dissection. Thiel embalming was discovered in 1992, by Walter Thiel, which this method was introduced to preserve cadavers in a very long period of time and cadavers can be more flexible and suitable for surgeons to practice the surgical protocol and for research activities.

Keywords: Auriculotemporal nerve, Thiel embalming, variation

Ethical Statement:

The cadaveric research has been approved. All cadavers at CAHID (Centre for Anatomy and Human Identification) have donated their bodies to medical sciences as per the Anatomy 1984 and the Human Tissue (Scotland) Act 2006. As part of donating, they give permission for their bodies to be used for medical education, medical research, and medical training.

P10. Unbinding Anatomy: A Personal Journey Across Disciplines and Generations

Quaye Benedicta

Department of Clinical Anatomy, Faculty of Health and Medicine, Lancaster University, Lancaster, United Kingdom.

b.quaye@lancaster.ac.uk

X: @BenyquayeMensah

Anatomy has long been the backbone of medical education: structured, precise, and deeply traditional. But over time, I have come to see it as much more than an academic discipline. For me, it has become a way to connect, to serve, and to make a meaningful impact across generations and communities. One of the most poignant experiences in my career was organizing the first World Anatomy Day at my University. What began as a simple educational initiative transformed into a celebration of shared curiosity and connection. Non-medical Students engaged with anatomical models, created their own skin out of paper, and embraced learning through play. Medical student volunteers took on roles as teachers and storytellers. In that moment, anatomy stepped beyond its formal bounds and became a source of wonder and pride. Beyond the University walls, my involvement in training rural health workers in Ghana brought anatomy into the heart of community. Teaching cardiopulmonary resuscitation in remote areas with limited resources highlighted anatomy's life-saving potential and brought anatomy into urgent, everyday contexts. Anatomy became a tool for empowerment to build knowledge, confidence, and resilience in communities facing real challenges, a means to save lives, and to foster hope. To unbind anatomy is not to weaken its rigor, but to expand its reach and view it as a living, evolving discipline that grows richer through human connection. These experiences affirm my vision for the future of anatomy: one that is integrative and deeply human where anatomy is not just taught but lived.

Keywords: Community engagement, Intergenerational learning, Humanistic anatomy.

P11. The debate on anatomical eponyms: balancing clarity, ethics, and gender neutrality

Viktoriia Yerokhina[1] and Munesh Khamuani[2]

[1]School of Medicine and Dentistry, University of Central Lancashire, Burnley, UK.
[2]School of Medicine, University of Nottingham, United Kingdom.

VVYerokhina@uclan.ac.uk

X: @vi_histo

Using eponyms in anatomical terminology remains a controversial and evolving topic in medical education and clinical practice. Eponyms have traditionally served to honour individuals who contributed to scientific discovery. However, they often lack descriptive clarity and can create confusion for students, educators, and healthcare professionals. In addition, some eponyms are associated with problematic historical legacies, raising ethical concerns. One notable example is the former term Clara cells, now replaced by club cells, following the revelation that Max Clara was a Nazi party member who conducted research on the bodies of executed prisoners. Such cases have prompted international efforts to remove ethically compromised names from official anatomical nomenclature. Despite these efforts, replacing well-established eponyms is not always straightforward. For instance, Kiesselbach's plexus - a common site of anterior nosebleeds - can be described as the anterior nasal vascular plexus, but this alternative is not yet widely adopted in clinical practice. Theodor Billroth (known for Billroth's fascia) presents another example; although his surgical contributions are undeniable, his documented racist and anti-Semitic views have led to debate about the continued use of his name. Additionally, terms such as Fallopian tubes and Bartholin's glands are increasingly being replaced with more descriptive, gender-neutral terms like uterine tubes and greater vestibular glands, aligning with modern values of inclusivity and clarity. Whilst the use of eponyms cannot be completely eradicated, the discussion around their use is important to standardise descriptive and gender-neutral terminology as we educate the future generation doctors and healthcare professionals.

Keywords: Eponyms, anatomical terminology, ethics in medical education.

P12. From the Public to the PhDs: reflecting on the value of outreach in promoting opportunities in musculoskeletal and forensic anatomy

Christopher Aris

Forensic Science, School of Chemical and Physical Science, Keele University, UK.

c.aris@keele.ac.uk

Anatomy suffers from being considered difficult and inaccessible to those not (bio)medically-inclined. This is exacerbated in niche subfields which are considered as even more inaccessible due to lack of clear information on: what they entail (exaggerated by media portrayals); opportunities to study and attain associated careers; and the association with anatomy generally. My route into anatomy was through exposure to cadaveric dissection within an MSc, and fortunate timing in job openings at former affiliated institutions where I had experience/connections – a poor representation of an accessible route into anatomy, and poor case study in accessibility. Since 2021, as my own position as an early career anatomist solidified, I began work in public outreach, aiming to provide affordable/free access to anatomical knowledge, education, and mentoring in identifying opportunities in anatomy – specifically musculoskeletal/forensic anatomy. To date this has seen 25 outreach workshops (averaging 2hrs long) facilitated with museums, village halls, schools, air cadet barracks, and outreach centres – with an estimated reach of 800 people across ages of 12-90+yrs. The success of these workshops in meeting the original aims are evident through a number of attendees now studying anatomy-based HE courses and/or holding anatomical jobs. While tricky to quantify, the contact many attendees have chosen to retain with me, and the updates/testimonies they send me proves the impact that outreach can have. The main impact being that even public-level short-form outreach can lead to very real improvements in accessibility into anatomy even if only conducted at a relatively small scale.

Keywords: Outreach, Careers, Opportunities.

Ethical Statement: The presentation draws on my experiences conducting public outreach events and workshops in MSK and forensic anatomy over a period of five years. Each workshop, where required, was given appropriate ethical approval, but this abstract does not relate to any individual or specific piece of research.

P13: Dissection versus Prosection: Evaluating student opinion on differing modes of anatomy teaching at the University of Nottingham.

Reba Mathew and Kareena Mann

University of Nottingham, Nottingham, United Kingdom

mzyrm23@nottingham.ac.uk

Cadaveric dissection has long been considered the gold standard of anatomy teaching, but the rise of alternatives like prosection has sparked debate. This study explores how anatomy teaching influences students' medical school choices, the perceived effectiveness of learning resources, and potential improvements in anatomy education. Conducted at the University of Nottingham School of Medicine (which uses dissection and prosection) and Lincoln Medical School (which uses prosection alone), an online survey was distributed to first- (n=279, 83), second- (n=249, 84), and third-year (n=261, 77) students via QR code. Data were collected in October 2024 from the 2024-2025 and 2023-2024 cohorts. Qualitative responses were analysed using Braun and Clarke's thematic analysis. Nottingham students were more positively influenced by anatomy teaching methods when applying for medical school. Dissection was valued for its 'visualisation' and 'interactivity and learning skills,' while prosection was favoured for 'visualisation', 'dislike for dissection,' and 'saving time.' Disadvantages of dissection included 'complexity' and being 'too self-led,' whereas prosection was criticized for its 'lack of interactivity' and students', 'desire to dissect.'. In conclusion, dissection remains a valuable educational tool and should be integrated with other methods to enhance engagement and learning. Student feedback suggests key areas for improving anatomy education at the University of Nottingham.

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Keywords: Dissection, Prosection, Integration

Ethical Statement:

Ethical approval for this study was granted in full from the School of Life Sciences Research Ethics Committee at University of Nottingham (ethics reference: F140923DM).

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