

# Bristol 2025



## 31st Scientific Congress of the IMPT



25th & 26th September 2025





31<sup>st</sup> Scientific Congress of the  
**IMPT**  
25<sup>th</sup> and 26<sup>th</sup> September 2025



**BRISTOL**

# IMPT Chair's Welcome

Welcome to Bristol! I'm delighted to welcome you to the 31<sup>st</sup> IMPT Biannual Scientific Congress.



The local team has worked hard on the programme. It has a fantastic range of topics and workshops, including the latest innovations – I personally always look forward to finding out about a new technique. We have a variety of trade stands and poster displays, sharing innovations from all over the UK, and showing how our profession continues to drive the very best treatment and care for patients.

Of course, our biannual events aren't just about earning your CPD hours. The Congress is always a great place to reconnect and build new connections and this year's evening events are held in some of Bristol's most interesting venues; I'm looking forward to dining beneath Concorde.

I would like to thank our sponsors, who are bringing us updates on the latest tech as well as Thursday's hands-on workshops – I hope that you attend and benefit from these. I'd also like to extend a personal welcome to our guests from the ISAPE, Dr Klapper and Ms. Sauer, together with all our international speakers and delegates.

This year the IMPT has endeavoured to bring you an interesting and enjoyable programme, while keeping costs as low as we can. We wouldn't have been able to do it without our voluntary organising team, who deserve our massive thanks. Lead organiser Amy Davey has been ably supported by Misha Newnham, Clair Crooks, and Suzan Fowweather. This year the conference also has its own website, with thanks to Miranda Lowther.

I'd like to thank the IMPT council for their contributions during this busy period, with a special mention for the offsite team, Naimesha Patel and Karen Boyd, not forgetting Jim Dimond and Marios Philippou for the website input and Catherine Turner for communications.

Here's to another inspiring and enjoyable Scientific Congress.

Steve Hollisley-Mclean  
IMPT Chair

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# About The IMPT

The Institute of Maxillofacial Prosthetists and Technologists (IMPT) has, since its first conference in 1963 registered and educated its members who work within Maxillofacial team, in the specialist rehabilitation of patients requiring treatment after a traumatic injury, cancer surgery or defects from birth malformation. Someone registered with the IMPT has followed extensive training to provide a variety of specialist services to patients and surgical specialists.

## IMPT Scientific Congress 2025

The IMPT Conference is run nationally every 2 years and is organised by a local team. Due to the pandemic, timings of the conference have been disrupted and we welcome the delegates to reunite after several years of reduced events. Now into its 62nd year, the event has grown, and despite being held over only 2 days, Thursday 25th and Friday 26th September, it is a full schedule offering delegates up to 15 hours of CPD. The conference, accommodation and exhibition will be held at the Bristol Marriot Royal Hotel in the heart of Bristol city centre.

As usual, the conference programme has a line-up of expert speakers and content will have a universal appeal to attract delegates from across the UK and Internationally. We hope you will join us on the final evening for a black-tie evening dinner and drinks reception held at the iconic Bristol Aerospace, under the stunning Concorde.

The IMPT Congress provides a great opportunity for those looking to raise their profile, showcase new products, or develop their customer base. This document provides an overview of the opportunities available.

## Venue

The Conference and Exhibition will be held at the Bristol Marriot Royal Hotel right in the city centre, just minutes from Bristol Temple Meads Train Station and the M4 motorway.

The spacious exhibition room is located on the ground floor, and next door to the main lecture theatre. The break session for tea, coffee and lunches will be in the held within the exhibition area enabling maximum time with delegates. This time, we are including a stamp card/app from visiting exhibitors, which will be required to be filled by delegates in order to receive the additional CPD hours.

## Audience Profile

Building upon the success of the 2022 and Congress-Lite 2023 events, it is anticipated that IMPT 2025 Congress will attract over 100 attendees including delegates, speakers and exhibitors. Last time attendees came from across the UK and over 10 countries worldwide.

## Continuing Professional Development (CPD)

There is **up to 15 hours CPD available** for the event, via confirmation of attendance to all events and exhibitor stands.

# IMPT Congress Awards

## **The Win de Ruiter Delft Plate**

Awarded for the best research presentation. Mr Win de Ruiter from Ridderkirk near Rotterdam provided a Maxillofacial Prosthetic service for the Rotterdam area and donated this award in 1985. This award reflects significant contribution to academic scientific research in the field.

## **The Mount Vernon Award**

Awarded for the best clinical case study presentation. Acknowledging technical skill, clinical excellence and beneficial patient outcomes. This award was first put forward by Chief Maxillofacial Prosthetist Mr John Hayward at Mount Vernon Hospital, and was first presented at the 1981 IMPT congress.

## **The President's Award**

Awarded for the best poster display. This award was inaugurated at the 1983 IMPT congress.

## **The Kidd Award**

Awarded for the best innovation or service development reflecting achievement in leadership, service development, clinical treatment, academic breakthrough or evidence-based change in work practice with beneficial outcome. The award can also reflect outstanding work undertaken outside of Congress. This award was donated by Mr Norman Kidd, who began making subperiosteal implants in 1956 and upon his retirement instigated the Kidd Award plaque in 1977.

## **The Ian MacLeod Alumno Award**

Awarded to the most outstanding oral contribution from a Member in Training or recently qualified Member. This award has been dedicated in honour of Ian MacLeod; a member of the IMPT who had a positive influence on many young MfPs.

## **The Rising Star Award**

Awarded to the most outstanding contribution from an IMPT Member (MIMPT) who has developed their clinical and scientific practice, shown professional leadership and is emerging as a future leader in the profession within 6 years of gaining the MSc qualification and presented at congress as an oral presentation.

## **The IMPT Travel Award**

£2500 is awarded to the successful applicant to provide the means for study and research.

## **The Brian Conroy Award**

Awarded for outstanding service to maxillofacial prosthetics. Donated by Brian Conroy MBE FIMPT (Hon) in 1969, the award was commissioned "for those who have given significant service for advancement in technology, prosthetics, surgery and other activities that relate to maxillofacial prosthetics and technology" 2022

## **Congress Assessors**

TBC





# Ship-shape and Bristol Fashion!

Amy, Misha and Clair are delighted to welcome you to Bristol for the 31st Scientific Congress of the IMPT.

Bristol is well known for its engineering, aerospace, arts, architecture and diverse culture.

This city is where innovation meets charm, and history pulses through every cobbled street and cutting-edge lab. It has long been a hub of creativity, engineering brilliance, and medical advancement.



The city's engineering legacy is legendary. Isambard Kingdom Brunel, one of the greatest engineers of the 19th century, left his mark here with the iconic Clifton Suspension Bridge and the pioneering SS Great Britain — the world's first iron-hulled, steam-powered passenger ship. Those of you who attended the 1997 Bristol IMPT Congress will have experienced this yourselves!

Today, Bristol continues to lead in aerospace and robotics, with companies like Airbus and Rolls-Royce maintaining a strong presence.

Healthcare in Bristol has deep roots too. The Bristol Royal Infirmary, founded in 1735, was one of the earliest voluntary hospitals in England. The city has since grown into a centre for medical research and education; the University of Bristol's medical school driving innovation in public health, neuroscience, and surgical techniques, and University of the West of England a renowned centre for nursing and healthcare teaching.



In April this year, the Reconstructive Prosthetics team at North Bristol NHS Trust opened Bristol 3D Medical Centre, an innovative facility that was envisioned by Kevin Page MBE and Mr Alistair Cobb in the early years of medical 3D printing. The centre expands the existing prosthetics service and enables a region-wide service providing, surface scanning, digital design and 3D printing.

Although you may not be able to see all of Bristol during this short visit, the Bristol Congress is held in the heart of the city next to the buzzing harbourside. We invite you to explore, connect, and be inspired!



# Thursday 25th September

**8:30am Registration (Coffee and Trade Stands)**

**10:00am Welcome** Lord Mayor of Bristol, Councillor Henry Michallat  
IMPT Chairman, Steven Hollisley-McLean

**10:15am Presidency Handover**

New President's Lecture: Mr Alistair Cobb, Consultant Oral and Maxillofacial Surgeon and Clinical Director Southwest Cleft Service

## Session 1: Case Studies

**10:30am Key Note Speaker Mr Jonathon Pleat** Consultant Plastic and Reconstructive Surgeon, North Bristol Trust, accompanied by Misha Newnham

**10:50am Steven Hollisley-McLean** - *Partial Nasal Prosthetics Retained using the Contralateral Nasal Aperture*

**11:05am Nimisha Dunn** - *Factors which affect the success rates of extra-oral implants*

**Questions and Discussion (10 minutes)**

**11:35am BREAK and TRADE STANDS (10 minutes)**

## Session 2: Education, Research and Innovation

**11:45am Key Note Speaker Dr Emma Rees**, Associate Professor of Healthcare Science/Clinical Scientist

**12:15pm Se Hun Chung** - *Enhancing Maxillofacial Prosthesis Outcomes via High-Fidelity 3D Reconstruction*

**12:30pm Saharra Tariq** - *Investigating the Impact of Microfibre Flocking Length and Concentration on the Mechanical Properties of Maxillofacial Silicone*

**Questions and Discussion (10 minutes)**

**12:55pm LUNCH and TRADE STANDS (40 minutes)**

**1:00-1:30pm Research Collaboration Lunch Meeting** - open to all to discuss interest in research and access to research. Lead by IMPT Research Group



# Thursday 25th September

## Day Event at The Marriot Royal, Bristol

- 1:35pm**      **Danielle Adair** - *An eye for an eye: A pilot study on the visual perception of ocular prosthetics using hand-painted and digital iris fabrication methods*
- 1:50pm**      **Shivani Lakhanpal** - *An investigation of the effect of thixotropic agent on the colour stability of pigmented maxillofacial silicone elastomer subjected to artificial ageing*
- 2:05pm**      **Marietta d'Almeida** - *CREATE study*
- 2:20pm**      **Marios Philippou and UCLan** - *Clinical Dental Technology: A Gateway to Maxillofacial Prosthetics and Reconstructive Science*
- Questions and Discussion (10 minutes)**
- 2:45pm**      **BREAK and TRADE STANDS (15 minutes)**

### **3:00pm to 5:30pm Workshops**

Pre-booking is required onto one of the 3 events.

#### **Workshop 1 King's Suite**

##### **Materialise**

Launch of new software program

## Workshop 2 Windsor Room



A Technovent 'Hands On' Technique Workshop

### 'Advances and Updates in Magnet Retention and Silicone Technology for Maxillofacial Prosthetics'

Presented by Peter Evans and Mark Waters

This workshop will dive into how to use Technovent silicone elastomers and magnetic retention systems in prosthetic work. We'll start with the basics of silicone chemistry, then move on to how Technovent magnets can be chosen and built into a final prosthesis.

In the silicone session, you'll get a clear introduction to how silicones work, followed by demonstrations and a hands-on activity where you'll make advanced multi-durometer prostheses.

In the magnetic retention session, we'll look at how to choose the right components for different clinical situations and explore the options available across implant systems.

The course is open to everyone working in anaplastology – from trainees to newly qualified prosthetists – and is designed to give a deeper understanding of both silicone materials and magnetic systems. The presenters bring plenty of real-world experience, and the workshop is a chance to learn from them in a relaxed, informal atmosphere.

What's included:

- A look at the Technovent magnet system and how to select the right parts for different cases.
- Demonstrations of impression techniques for magnets across various implant systems.
- An overview of silicone technology and how it applies to maxillofacial prostheses.
- Practical demonstrations and a hands-on session on advanced custom prosthesis techniques.

## **Workshop 3 Lancaster Room**

**TBC**

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- 3D Scanning to provide the best quality for your application.
- Providing CAD models to the software package of your choice.
- Independent inspection using optical measuring techniques.
- Supplying 3D scanners and software from Artec3D and #HandsOnMetrology with comprehensive training and ongoing support.
- Providing quality 3D scanning rental equipment.
- Selling AESUB 3D scanning spray and reference markers.

## CONTACT US

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# Thursday 25th September

## Evening Event at We the Curious Science Museum



### **6:30pm to 7:30pm      Poster Presentations**

Posters will be presented at We the Curious science museum (a 5 minute walk from the Marriott Royal Hotel). Attendees will have access to lower museum and bar.

Presenters will be beside their posters during this session to answer questions. External attendees also welcome through external ticket purchase.

Following this, Reunion Dinner attendees will be served a Hot Bowl standing buffet and invited to watch the spectacular Planetarium show.

### **7:30pm to 11pm      Reunion Dinner Buffet** ***Plus Planetarium Show***



# Thursday 25th September

## Poster Presentations at We the Curious

### **Penny Whittington**

Treatment and prosthetic options for an orbital patient with additional medical complexities : A Case Study

### **Amy Davey**

The development of a reliable tool for objectification of infant head size and shape

### **Lawrence Dvogalski**

3D printable Key Spacer Articulator for Single Jaw Osteotomy Planning

### **Karen Boyd and Justyna**

Digitising Feedback Forms at the Maxillofacial Prosthetics Department

### **Rachel Jenner**

Micropigmentation

### **Katie Spooner**

The impact of facial prostheses on quality of life for people with acquired defects

### **Marios Philippou**

Impact of a patient-centred approach in the rehabilitation of a young female patient requiring a partial nasal prosthesis due to cocaine-induced Granulomatosis with Polyangiitis (GPA)



# Friday 26th September

## Day Event at The Marriot Royal, Bristol

**8:30am**      **Live Demonstration—TBC**

**9:30am**      **Welcome**

### **Session 3: MDT Approach**

**9:30am**      **Key Note Speaker: Mr Neil Bulstrode** MBBS, BSc(Hons), MD, FRCS(Plast) Consultant Plastic and Reconstructive Surgeon, Great Ormond Street Hospital, London

**10:00am**      **Peter Evans** - *Additive manufactured custom nasal obturators for velopharyngeal dysfunction*

**10:15am**      **Katie Spooner and Tejal Mistry** - *Dosimetric Evaluation of Patient-Specific 3D-Printed Radiotherapy Bolus for Head and Neck Treatment Using the Materialise Radiotherapy Plug-in: A Comparison with Current Clinical Practice*

**Questions and Discussion (10 minutes)**

**10:40am**      **BREAK and TRADE STANDS (15 minutes)**

### **Session 4: 3D Technology in Healthcare**

**10:55am**      **Martina Musfud** - *From Plastic to Bone - Printing Plastic for Use in Bone Grafting*

**11:10am**      **Sarah Newton** - *Custom Breast Prosthetics*

**11:25am**      **Catherine Turner** - *3D planning and surgical guide design enhancing the preoperative planning of our complex craniofacial cases*

**11:40am**      **Lily Dewhurst** - *The Whiston experience of multimodal treatments of burn patients and the development of our workflow from 2019 to 2025 to produce pressure splints.*

**Questions and Discussion (10 minutes)**

**12:05pm**      **Yordanka Ihtimanliyska and Melanie Bugden:- STP Trainee Update**

**12:15pm**      **LUNCH and TRADE STANDS (45 minutes)**

# Friday 26th September

## Day Event at The Marriot Royal, Bristol

### Session 5: Wellbeing and Diversity

- 1:00pm**      **Philippa Statter** - Green Social Prescribing
- 1:20pm**      **Sameera Miah-Moola** - *Challenging Cases and Their Specific Needs: Mental Illness, Neurodiversity, and Gender Dysphoria*
- 1:35pm**      **Simon Hall** - *Prosthetics Futures: Co-designing speculative reconstructive prosthetics through art*
- Questions and Discussion (10 minutes)**
- 2:00pm**      **BREAK and TRADE STANDS (10 minutes)**

### Session 6: Clinical and Patient Experience

- 2:10pm**      **Key Note Speaker: Dr Nicola Stock**, Associate Professor of Psychology at the Centre for Appearance Research, University of the West of England, Bristol
- 2:40pm**      **Kirsty Galt** - *The Rehabilitation of Rhinectomy Patients*
- 2:55pm**      **Annemarie Riedinger** - *Creativity for a Challenging Case leading to Innovation*
- Questions and Discussion (10 minutes)**
- 3:30pm**      **Patient Experience Q&A session**
- Interview of patient group with live question and answer session*
- 4:00pm**      **Key Note Speaker: Simon Brown**, Veteran
- 4:30pm**      **IMPT Business Meeting**
- 5:00pm**      **CLOSE**

# Friday 26th September

## Evening Event at Aerospace Bristol, Filton

Hayes Way, Patchway, Bristol. BS34 5BZ



### **7:00pm to 11:30pm      Awards Dinner**

The black-tie evening event is held at the iconic Aerospace Bristol, under the stunning Concorde. The experience will start with drinks on the balcony overlooking the last ever Concorde to fly, before taking our seats for a first class dining experience under the wings of this iconic jet. We will also enjoy exclusive access on-board Concorde itself. Awards from the Congress presentations will be presented and an array of entertainment provided, for a memorable evening gala event.

**6:30pm                      Coaches from the Marriott Royal Hotel to Aerospace Bristol**

**7:00pm                      Arrival drinks**

**7:30pm                      Dinner**

**Awards and Evening Entertainment**

**11:30pm                      Return coaches from Aerospace Bristol to the Marriott Royal Hotel,  
Bristol City Centre**

**Marriot Royal Hotel 'Pub' room exclusive access 'til late.**

# Abstracts

## Session 1: Case Studies

### Partial Nasal Prosthetics Retained using the Contralateral Nasal Aperture

*Steven Hollisey-McLean, Morriston Hospital, Swansea, Wales UK*



Rehabilitating partial nasal defects without implants presents significant challenges, particularly in older patients who struggle with adhesive retention due to visual and dexterity limitations. While spectacle retention and anatomical undercuts can aid in securing a prosthesis, a subset of patients remains dissatisfied with conventional methods.

We describe a novel technique that utilizes anatomical engagement on the contralateral side, incorporating a thin, additively manufactured biocompatible substructure embedded with magnets to enhance prosthetic retention.

The complete manufacturing process is detailed and demonstrated through case studies, highlighting the effectiveness of this approach.

### Factors which affect the success rates of extra-oral implants

*Nimisha Dunn, Queen Elizabeth University Hospital, Glasgow, Scotland, UK*

Maxillofacial defects can arise from cancer, trauma or congenital malformations. Facial prostheses can help improve the patient's quality of life and the introduction of extra-oral implants has enhanced the patient's acceptance by improving retention, ease of maintenance and accurate positioning of the prosthesis.

**Aims and Objectives:** The literature on success rates of extra-oral implants in patients rehabilitated with facial prostheses was critically evaluated.

This presentation will:-

- Discuss the different factors which affect the success rates of extra-oral implants.
- Explain why extra-oral implants have different success rates in studies, the gaps in existing research, and how it can be improved.



# Abstracts

## Session 2: Education, Research and Innovation

### Enhancing Maxillofacial Prosthesis Outcomes via High-Fidelity 3D Reconstruction

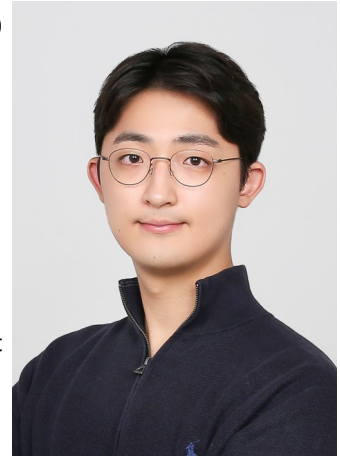
*Se Hun Chung, Guy's Hospital / Academic Centre of Reconstructive Science, King's College London, UK*

**Objective:** Maxillofacial silicone-based prostheses have a limited lifespan, often as short as six months, due to degradation caused by colour instability and material failure. This short service life negatively impacts both patient satisfaction and healthcare efficiency, as frequent replacements require multiple clinical appointments and lengthy manufacturing processes. Enhancing the durability, realism, and performance of these prostheses is essential to optimizing aesthetic outcomes and ensuring economic sustainability. Emerging digital technologies, such as 3D imaging and additive manufacturing, offer significant advantages by enabling precise geometric and chromatic accuracy while facilitating faster, cost-effective remanufacturing through the reuse of digital datasets. However, existing approaches face challenges, including dependency on light sources, limited colour fidelity, and difficulties in achieving consistent quality.

**Approach:** This study utilised state-of-the-art 3D imaging systems to achieve high-resolution capture of facial geometry and create accurate 3D reconstructions. A novel colour-calibration protocol was developed, combining standardised daylight illumination photography with blue-light-based surface scanning to optimise both surface precision and colour fidelity. Validation of the workflow was performed by comparing the outputs to alternative imaging techniques and spectrophotometric data to ensure accuracy and reproducibility.

**Results:** The proposed integration of advanced imaging techniques and colour calibration significantly improved the realism and geometric accuracy of 3D facial models. Prostheses fabricated using this method demonstrated enhanced aesthetic outcomes.

**Significance:** This research highlights the transformative potential of advanced 3D imaging and colour-matching protocols in improving the durability, quality, and efficiency of maxillofacial prostheses, ultimately benefiting patients and healthcare systems.

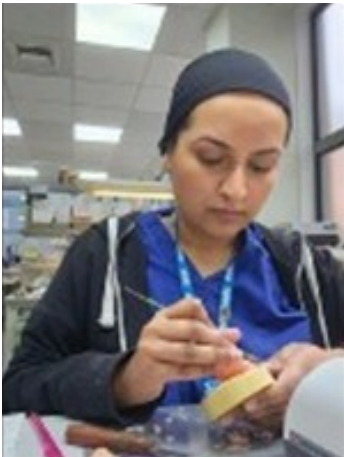


# Abstracts

## Session 2: Education, Research and Innovation

### Investigating the Impact of Microfibre Flocking Length and Concentration on the Mechanical Properties of Maxillofacial Silicone

**Saharra Tariq**, *Leicester Royal Infirmary, UK*



Maxillofacial prostheses are typically made from polydimethylsiloxane (PDMS) due to its desirable properties such as inertness, biocompatibility, flexibility, and colour stability. To achieve a skin-like appearance, silicone is coloured using pigments and flocking. While pigments provide colour, flocking also adds depth and imparts light-scattering characteristics to the silicone. Flocking, made from synthetic materials like nylon and rayon, enhances the aesthetics of prostheses by altering light scattering, resulting in a three-dimensional appearance due to transmissions, refractions, and reflections with the flocks.

Patients with maxillofacial defects face social and psychological challenges, making aesthetically pleasing prostheses with high mechanical and physical properties essential. The prosthesis material should have high tensile strength and tear resistance to blend with surrounding tissues and withstand application and removal without damage. Material hardness is also crucial for a natural look and movement.

Though maxillofacial silicone has been tested for these properties, little is known about how different lengths and concentrations of flocking affect them. This study aims to enhance the clinical use of microfibre flocking by examining its impact on the mechanical properties of maxillofacial silicone. Various lengths (0.5, 2.0, and 3.5 mm) and concentrations (0.5% and 1.0%) of flocking will be compared to assess effects on tear strength, tensile strength, percentage elongation, and hardness. The study seeks to identify the optimal flocking length and concentration that enhance silicone properties without detrimental effects.

### An eye for an eye: A pilot study on the visual perception of ocular prosthetics using hand-painted and digital iris fabrication methods

**Danielle Adair**, *Queen Elizabeth University Hospital, Glasgow, Scotland, UK*

The loss of an eye due to trauma, disease, or congenital conditions can significantly impact an individual's appearance, vision, and social interaction. Custom-made prosthetic eyes are designed to restore both facial aesthetics and confidence and are manufactured primarily by using hand-painted techniques to replicate the appearance of the contralateral eye. However, this process is time-consuming and highly dependent on the artistic skill of the prosthetist.



This pilot study investigates the use of digital photography as an alternative method for iris fabrication in ocular prostheses. NHS staff members were asked to visually compare four fabricated eye units (two hand-painted, two digitally photo-printed)



# Abstracts

## Session 2: Education, Research and Innovation

against a gold standard iris kit to determine which method was perceived as most realistic.

The eye units, representing blue, brown, and hazel irises, were visually organised and evaluated by 30 NHS participants twice with one week between each selection. This study aims to assess whether the digital method can achieve aesthetic outcomes comparable to or superior to traditional hand-painting.

This research seeks to explore whether digital photo-printed irises can provide a reliable, cost-effective alternative to hand-painting, potentially reducing treatment and production time while maintaining or enhancing realism within a prosthesis. The findings of this study could have significant implications for the development of ocular prosthetics, improving patient outcomes and rehabilitation processes. Future research may build on these results to refine the digital fabrication process and expand its application in the field of maxillofacial rehabilitation.

### **An investigation of the effect of thixotropic agent on the colour stability of pigmented maxillofacial silicone elastomer subjected to artificial ageing:**

**Shivani Lakhanpal**, Nottingham University Hospital Trusts, UK



Maxillofacial prostheses are used to restore facial contours and appearance following cancerous resection, congenital deformity or traumatic defects. Silicone elastomers are commonly used due to their chemical inertness, durability and ease of manipulation. Despite these advantages, silicone elastomers and its colourants are susceptible to degradation within 6-12 months. Ultraviolet (UV) light has been identified as a main cause of degradation.

During manufacture of the prosthesis; pigments, catalyst and thixotropic agents are incorporated. Thixotropic agent (A-300-1, Factor II, USA) is a liquid additive which increases the viscosity of silicone elastomers by forming hydrogen bonds to prevent the silicone slumping and aids in placement in the mould. Two to three drops of thixotropic agent are recommended per 10g of silicone by the manufacturers (Technovent, UK). Due to variations in viscosity among silicone elastomers, the effects of thixotropic agent may differ between different silicones.

Colour stability of silicone elastomers under artificial ageing has been widely investigated. There is however limited research on the effect of thixotropic agent on colour. This study aims to investigate the impact of different thixotropic agent amounts on the colour stability of three commonly used pigmented silicone skin shades (Reality Series, M511, Technovent, UK) subjected to accelerated artificial ageing under UV light (Q-Sun, 1000 XENON, Q-Panel Lab Products, USA).

The outcome of this research is to determine whether thixotropic agent affects colour degradation and make recommendations to the profession of the ideal thixotropic agent ratio for optimal colour stability. The impact of the results may achieve a higher patient satisfaction with increased prosthesis longevity, saving time for the patient and Reconstructive Scientist.

# Abstracts

## Session 2: Education, Research and Innovation

### Cranioplasty Plate Design & Manufacture Study – ‘CREATE Study’

**Marietta D’Almeida**, *University of Cambridge, UK*

**Background** Globally autologous bone is the most prevalent material choice for cranioplasty but in many countries synthetic materials are now utilised in-line with changing manufacturing processes.

**Objective** This study aimed to better understand the different cranial plate design and manufacturing processes used by neurosurgical units throughout the **UK** by evaluating current practice over the past 10 years.

**Method** A mixed methods survey was circulated to all Institute of Maxillofacial Prosthetists & Technologists members, and UK hospital staff involved in design and manufacturing of cranial plates, questioning materials, procedures, labour, external services, and time used.

**Results** 66% (19/29) of respondents report in-house design but there is an uptrend in external design with 21% (6/29) reporting design solely by an external third party, and 14% (4/29) report using a mixture. This trend correlates with an overall decline in in-house manufacturing, with only 25% (4/16) reporting sole internal manufacturing and 44% (7/16) reporting cranial plates solely manufactured by a third party. Titanium was the most popular material used to manufacture cranial plates regardless of the manufacturing process at an average cost between £1500-£3500 depending on specifications and manufacturing process. Time range from cranial plate request to manufacture was between 10-60 days with the quickest urgent plate manufactured in 3 days.



### Clinical Dental Technology: A Gateway to Maxillofacial Prosthetics and Reconstructive Science

*University of Central Lancashire, UK*

Recruiting candidates for the Scientific Training Programme (STP) in Reconstructive Science and the maxillofacial prosthetics profession has become an increasing challenge. As the field seeks new strategies to attract and prepare skilled practitioners, Clinical Dental Technology (CDT) presents a promising gateway. This presentation will explore how CDT training can serve as a direct feeder into the STP, producing a highly skilled and clinically experienced candidate pool for the future of maxillofacial prosthetics. Using a case study of the BSc (Hons) in Clinical Dental Technology degree at the University of Central Lancashire (UCLan), UK, we explore how students can be provided with a strong foundation in both the technical and clinical aspects of removable intraoral prosthetic rehabilitation. Examples of experiential learning, theoretical and practical training and integrative technology are given to demonstrate how skills can be aligned with the evolving landscape of digital maxillofacial prosthetics, making CDT graduates well-prepared for further specialisation in the STP and maxillofacial prosthetics. By leveraging the CDT pathway, we can address recruitment challenges and strengthen the transferable skills of the workforce in Reconstructive Science.



# Abstracts

## Session 3: MDT Approach

### Additive manufactured custom nasal obturators for velopharyngeal dysfunction

**Peter Evans**, *Morrison Hospital, Swansea, Wales, UK*

Nasal obturation with a custom removable device is a suitable treatment option for patients with velopharyngeal dysfunction whose symptoms include hypernasal speech, abnormal articulation, and decreased intelligibility. However, fabrication of the devices requires specialist skill and considerable time. We describe a digital process from the initial nasal impression to the final fitting which facilitates the rapid, cost effective production of a light, comfortable, unobtrusive device that can be altered and replicated easily with the use of 3D printing.



### Dosimetric Evaluation of Patient-Specific 3D-Printed Radiotherapy Bolus for Head and Neck Treatment Using the Materialise Radiotherapy Plug-in: A Comparison with Current Clinical Practice

**Katie Spooner and Tejal Mistry**, *University Hospital Leicester, UK*



**Aims and Objectives:** The aim of this study was to evaluate if a custom-made bolus material fabricated utilising computer-aided-design (CAD) and 3-dimensional (3D) printing could overcome the disadvantages of the currently used commercially flat boluses and subsequently improve patient care.

This study will: -

1. Explore a plethora of materials to determine the suitability for use in radiotherapy treatment,
2. Study the use of scripting and

3. Design bolus moulds utilising CAD and 3D printing.

**Method:** A PBU-60 Anthropomorphic whole-body phantom was put through a computed tomography scan and imported onto the Eclipse (v17) Treatment Planning system (TPS). A midface bolus piece was designed and fabricating in an array of materials. The conformality and density of each midface bolus piece was tested followed by the delivery of 100Gy. Finally, comparison tests were conducted against a commercial tissue-equivalent bolus.

**Results:** Following conformality testing, five midface bolus materials were discounted from further study. Insignificant differences were found between test results of the bolus piece fabricated utilising CAD and the commercial flat bolus. The DICE coefficient of the data sets showed superiority of using CAD and 3D printing in the fabrication process of radiotherapy boluses.

**References:** 1. The International Commission on Radiation Units and Measurements. (2025) Radiation Science: Quantities, Units and Radiation Measurement. [WWW] <https://www.icru.org/current-activities-of-icru/radiation-science-quantities-units-and-radiation-measurement/> [Accessed 28<sup>th</sup> Feb 2025].

# Abstracts

## Session 4: 3D Technology in Healthcare

### From Plastic to Bone - Printing Plastic for Use in Bone Grafting

**Martina Mifsud**, *Guy's Hospital London, UK*

Bone pathologies are an evergrowing issue with an ageing population. Such pathologies often require bone grafting, for which the current gold standard for treatment is autologous grafts, i.e. bone from the self. This has its own repercussions; and thus, researchers are constantly seeking alternatives. Polyetheretherketone (PEEK); a thermoplastic with mechanical properties similar to bone is a viable option – however it has limited bioactivity. This study aims to create a functionalised porous scaffold comprising PEEK which would facilitate human osteoblasts to adhere, proliferate and differentiate within due to its improved biocompatibility. PEEK was printed via FDM, creating an inherently porous scaffold. The mechanical properties of the porous construct compared to its solid counterpart were then tested according to ISO 178 (flexural testing standard for plastics). Flexural testing showed that the scaffold construct was ten times more flexible, with a tenfold decrease in the flexural Modulus ( $p = <0.001$ ) than its solid counterpart. The mechanical results of the porous scaffold are representative of the numbers



### Custom Breast Prosthetics

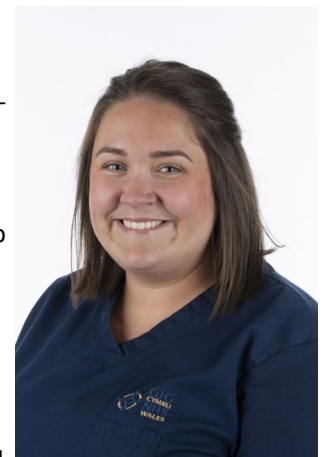
**Sarah Newton**, *Morrison Hospital, Swansea, Wales, UK*

Creating custom external breast prosthetics has long been a challenge due to difficulties in acquiring an accurate positive cast and the natural contour changes of the breast with and without a bra.

Advancements in digital technologies, including surface scanning, 3D design, and 3D printing, help overcome these challenges by enabling the production of symmetrical, well-fitting prosthetics.

We present a refined technique developed over several years, which involves capturing two surface scans, digitally combining them, designing the prosthesis, 3D printing a prototype, and manufacturing the final silicone foam prosthetic.

Additionally, we share our results in cases of bilateral and unilateral full/partial mastectomies and Poland Syndrome, demonstrating the effectiveness of this approach.



# Abstracts

## Session 4: 3D Technology in Healthcare

### **3D planning and surgical guide design enhancing the preoperative planning of our complex craniofacial cases**

**Catherine Turner**, *Queen Elizabeth University Hospital, Glasgow, Scotland, UK*

The huge advancements in 3D planning and surgical guide design have really enhanced the preoperative planning of our complex craniofacial cases. Within this presentation, I hope to highlight the key areas of consideration, discuss the main challenges and also showcase a few cases studies of planning major skull reshaping surgeries. These case studies will demonstrate how 3D manipulation and the fabrication of custom surgical guides can lead to improved surgical outcomes and patient results. Utilizing 3D planning for these complex cases not only aids in anticipating potential complications but also streamlines communication between the surgeon and the multidisciplinary team, ensuring that everyone is aligned with the surgical objectives. This approach ultimately facilitates a more efficient surgical process and contributes to achieving optimal results for patients undergoing these intricate procedures.

### **The Whiston experience of multimodal treatments of burn patients and the development of our workflow from 2019 to 2025 to produce pressure splints.**

**Lily Dewhurst**, *Whiston Hospital, Mersey and West Lancs NHS Trust, UK*



The Prosthetics Department at Whiston Hospital plays a vital role in the rehabilitation of patients treated at the Mersey Burn Centre, one of the largest burn centres in the UK. This presentation will highlight several patient cases from 2019 to 2025, showing a spectrum of injuries and the multidisciplinary approaches used to manage keloid and hypertrophic scarring. Treatments included, but were not limited to, surgical interventions, physiotherapy, cryotherapy, steroid injections, and pressure splinting. Additionally, I will discuss how the introduction of the Artec Leo scanner has transformed our workflow for patients requiring pressure splints over the past six years, outlining both the benefits and limitations observed.



# Abstracts

## Session 5: Wellbeing and Diversity

### Green Social Prescribing

**Philippa Statter**, *Health & Environment Higher Officer, Natural England, Bristol, UK*

“Green social prescribing is the practice of supporting people to engage in nature-based interventions and activities to improve their mental and physical health. Social prescribing link workers (and other trusted professionals in allied roles) connect people to community groups and agencies for practical and emotional support, based on a ‘what matters to you’ conversation.

Green social prescribing includes both what is known as green and blue activities. These could include local walking schemes, community gardening projects, conservation volunteering, green gyms, open water swimming or arts and cultural activities which take place outdoors. These activities may be ‘prescribed’ by link workers (and other trusted professionals) alongside other forms of support, for example, referrals to support for housing or finances – based on the needs and circumstances of each individual.” *NHS England*

### Challenging Cases and Their Specific Needs: Mental Illness, Neurodiversity, and Gender Dysphoria

**Sameera Nahla Miah-Moola**, *Kings College London & Guys and St Thomas’ NHS Trust, London, UK*

Mental illness has been a significant concern in the UK, further exacerbated by the COVID-19 pandemic. The pandemic has also highlighted the profound impact of long COVID and other chronic conditions on individuals’ lives since 2020. These challenges are compounded by housing insecurity, rising living costs, and unemployment due to chronic health conditions. Adding gender dysphoria to this mix underscores the challenges of inadequate care, long waiting lists, and societal transphobia. Combined with traumatic injuries, congenital diseases, or loss of facial or bodily structures, these factors can lead to significant psychological and physical suffering.

Reconstructive Scientists in the UK often care for patients with such complex needs. Clinicians must provide individualised care tailored to patients’ specific requirements while staying within their professional remit. Training focuses on supporting patients with challenges related to self-confidence, dignity, and interpersonal relationships. However, managing patients with additional needs, such as neurodiversity or gender dysphoria, demands a more nuanced approach.

This raises critical questions: How can we better support patients with complex needs who may not follow typical recovery trajectories? Should care approaches differ for such patients, and if so, how?

This presentation explores patient cases managed within the Maxillofacial Department at Guy’s Hospital. These cases demonstrate the value of personalised care strategies in addressing the unique needs of individuals facing multifaceted challenges, underscoring the importance of adaptability and innovation in clinical practice.





# Abstracts

## Session 5: Wellbeing and Diversity

### Prosthetics Futures: Co-designing speculative reconstructive prosthetics through art



**Simon Hall**, *University of Bristol, UK*

'Prosthetic Futures' is an interdisciplinary creative arts project researching collaborative design of prosthetics. The initiative joins service users alongside professionals to immerse the team in creative spaces. Together they craft novel ideas exploring the embodiment and senses of future prosthetics and reflect upon sustainability, person-alisation, and how emerging technologies and materials may shape prosthetic possi-bilities.

# Abstracts

## Session 6: Clinical and Patient Experience

### The Rehabilitation of Rhinectomy Patients

**Kirsty Galt**, *University Hospital Crosshouse, Scotland, UK*

The rehabilitation of rhinectomy patients can prove challenging for both the patient and the rehabilitation team. Methods of rehabilitation include surgical reconstruction or a custom nasal prosthesis.

Good functional and aesthetic results can be achieved with these methods, but they also both come with their unique set of challenges

This presentation is a case study detailing a rhinectomy patient's journey from surgical excision to surgical reconstruction and finally prosthetic rehabilitation. It will detail each stage of the patients' treatment journey including the pros and cons of each rehabilitation method employed.

# Abstracts

## Session 6: Clinical and Patient Experience

### Creativity for a Challenging Case leading to Innovation

**Ann-Marie Riedinger**, *Centre d'épithèses faciales, Strasbourg, France*

This is a case presentation-of of a patient suffering from severe neurofibromatosis. The request was to create a prosthetic solution for him, since surgery as a child failed. The severe cosmetic affect-effects resulted in collapse of the left side of his face. Missing bone structure excluded implant retention and presented further challenges. Our goal was restore balance and integrity to the face, achieve secure prosthetic retention while allowing the patient to eat. We began by surface scanning the patient and designing 3D virtual reconstructions via ZBrush software. We will describe the step by step research and development process over a 22 month period, that ultimately led us innovate a new concept that not only provided a solution-for this patient, but was also directly tested and applied to an array of patients.



# Keynote Speakers

## **Mr Jonathan Pleat** BM BCh (Oxon), MA (Oxon), DPhil (Oxon), FRCS (Plast)



Mr Jon Pleat is a plastic surgeon with a general interest in burns, scarring, laser and reconstructive surgery. He is based at North Bristol NHS Trust and University Hospitals Bristol and Weston NHS Trust.

He is a past-Director of Research for the burns, scarring and wound healing charity, Restore. His research interests encompass first aid, wound healing, scarring and burn management. He collaborates with research groups in the UK and abroad as principal investigator on projects including OptiThermm and ELABS. His own DPhil degree looked at the molecular mechanisms of fibropro-

liferative scarring.

Since 2013, he has been the Lead for the UK's first independent, multidisciplinary scar team ([www.scarteam.co.uk](http://www.scarteam.co.uk)). He is a member of the steering committee of The Center for Appearance Research at The University of the West of England and is a Honorary Senior Lecturer at The University of Bristol. He is a member of The British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS), The British Burns Association (BBA), The European Burns Association (EBA) and the British Medical Laser Association (BMLA)."

## **Dr Emma Rees**

"Dr Emma Rees is an experienced clinical scientist specialising in ultrasound heart scans. Her career began in NHS Wales at the Morriston Hospital Cardiac Centre, Swansea where she worked for 10 years before moving to Swansea University to pursue a role which combined clinical and academic work. Emma was the past programme director for Healthcare Science (cardiology), a commissioned education programme which runs on an all-Wales basis. Since completing her PhD at the Wales Heart Research Institute, Emma has been developing a programme of innovation and clinical research to improve patient care by using heart ultrasound in out-of-hospital locations. Her current research combines clinical effectiveness and implementation science methods.



Emma is the scientific lead for a novel heart scan clinic in an award-winning Health and Wellbeing Academy at Swansea University. She is also a committee member for British Society of Echocardiography and a handling editor for the Journal Echo Research and Practice." *Health and Care Research Wales*

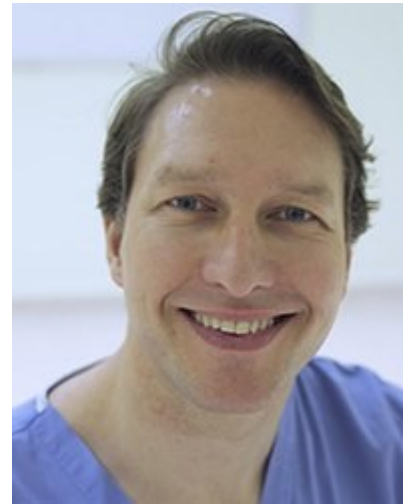
# Keynote Speakers

## **Mr Neil Bulstrode** BSc(Hons) MBBS MD FRCS(Plast)

“Neil Bulstrode was educated at Sherborne School, UK, before commencing his medical studies at Charing Cross and Westminster Medical School, London. During this time he also gained an honours degree (BSc) in Physiology. He graduated in 1993 (MB BS) and continued his surgical training in London to become a Fellow of the Royal College of Surgeons of England (FRCS) in 1997.

He trained in Plastic, Reconstructive & Cosmetic Surgery at a number of premier plastic surgery units both in London and Sydney, Australia. This included a two year period of research at the RAFT Institute of Plastic Surgery at Mount Vernon Hospital resulting in the award of a Doctorate Of Medicine (MD) in 2002. Neil has trained with some of the UK's top Cosmetic Surgeons and was the Cosmetic Fellow at the Wellington Hospital. He passed the Plastic Surgery Specialist Fellowship - FRCS (Plast) - of the Royal College of Surgeons in 2005, entered into the GMC Specialist Register for Plastic Surgery in 2006 and is a Full Member of the European Association of Plastic Surgeons (EURAPS), the British Association of Plastic Reconstructive and Aesthetic Surgeons (BAPRAS) and British Association of Aesthetic Plastic Surgeons (BAAPS).

Neil has both an NHS reconstructive and an adult aesthetic/cosmetic practice. He is a Consultant Plastic Surgeon at Great Ormond Street Hospital and is the Lead Clinician for the Plastic Surgery Department. This involves the reconstruction of congenitally deformed children, ear reconstruction, craniofacial surgery, the treatment of giant congenital naevii (moles) and vascular anomalies. His cosmetic practice includes all aspects of cosmetic facial, breast and body contouring surgery.” *NeilBulstrode.com*



## **Nicola Stock** DPhil in Psychology; MSc Health Psychology; MSc Research Methods in Psychology; BSc Psychology and Mental Health

Nicola is an Associate Professor of Psychology at the world-leading Centre for Appearance Research (CAR). She holds an undergraduate degree in Psychology and Mental Health, two Masters degrees in Psychological Research Methods and Health Psychology, and a PhD by publication (DPhil) focused on the psychological impact of cleft lip and/or palate. Nicola is passionate about psychological health, holistic and inclusive healthcare, and appearance diversity. Her work offers a better understanding of the psychological impact of appearance-altering conditions and associated treatment, develops evidence-based resources to support the psychological health of those affected and their families, and promotes appearance diversity in all aspects of our society.

Nicola currently leads the high-profile 'CARE' research programme (Craniofacial microsomia: Accelerating Research and Education) at CAR, alongside a range of additional national and international research projects. Nicola is Behavioural Sciences Section Editor of the Cleft Palate-Craniofacial Journal, past Co-Chair of the AC-PA Global Task Force for Holistic Outcomes, member of the Craniofacial Society of Great Britain and Ireland, and Board member of the NIHR Craniofacial Clinical Studies Group. *UWE, Bristol*



# Keynote Speakers



## **Simon Brown, Veteran**

“ Simon grew up in Morley, West Yorkshire, and joined the Army in 1997. On his third tour of Iraq in 2006 with the Royal Electrical and Mechanical Engineers, he was called to rescue a stranded vehicle with a crew of six on board following an insurgent attack. During the extraction, as the vehicle pulled away, he was shot in the face by a sniper. “Help for Heroes, 2025

“The bullet entered his left cheek and exited through his right cheek. Both his cheekbones were shattered, his jaw was broken and the roof of his mouth collapsed. His left eye was destroyed and he was left with only 20 per cent vision in his right.” Blind Veterans UK, 2025

Simon shares his story and experiences of treatment and rehabilitation.

## Notes



