

## **A practical exploration of shape capture techniques for custom contoured seating using vacuum formed bead bags**

### **Summary**

This parallel session will explore the casting methods employed to capture body shape through vacuum consolidation with the aim of sharing practice and ideas. It is aimed at a beginner/intermediate level. Note that seating materials and manufacturing methods will NOT be discussed.

### **Aims & Objectives**

There are numerous techniques for capturing body shape using casting bags. It is the aim of this session to share practice across clinical staff, technical staff and manufacturers. There is no “gold standard” for casting and so the aim is NOT to identify a singular method, but to explore how approaches vary between organisations.

### **Background, Technique, Standards, Clinical Detail, Results & Testing**

Custom contoured seating is provided routinely in wheelchair services across the country and, in a small number of cases, for static seating. It is a complex, highly skilled field of work, the clinician/engineer needing to have a sound understanding of postural management, coupled with the ability to think in three dimensions, in order to develop appropriate shaped supports to closely fit the human form. Manufacturers of seating, both commercial and NHS, do not generally share their practices as regards shape capture, not so much because of commercial sensitivities, but more because there is no platform so to do. Two books have been published in recent years which discuss custom contoured seating (Pope, 2007 and Taktak et al, 2014) but they do not expressly discuss the various techniques for shape capture. This session will facilitate the sharing of practice with the aim of improving outcomes for the patient. Please note that the framing method, used exclusively with the manufacture of (some) matrix seating systems, will not be covered as this is an entirely different technique.

The session will first introduce the subject area and briefly describe the reasons for using/not using custom contoured seating. This will be followed by a number of practical demonstrations using volunteers from the audience to demonstrate a variety of techniques. These will be facilitated by a selection of typical postures such as pelvic obliquity, rotation and tilt, extended hips, ab/adducted hips, flexed knees and kyphoscoliosis. It is intended that the session will be interactive, with the presenters acting as facilitators to discussion and the sharing of techniques, tips and ideas. The session will conclude with the presenters summarising the main learning points identified through the hour.

### **Discussion**

It is hoped that the session will develop clinicians', engineers' and manufacturers' breadth of skills in capturing body shape for the purposes of manufacturing custom contoured seating.

### **References**

Pope PM (2007) *Severe and Complex Neurological Disability - Management of the Physical Condition* Elsevier  
Taktak A, Ganney P, Long D, White P (Eds) (2014) *Clinical Engineering: A handbook for clinical and biomedical engineers* Elsevier

**Paul Dryer, Dave Long and Helen Nelson**

#### **Emails:**

[paul.dryer@nhs.net](mailto:paul.dryer@nhs.net)

[Dave.Long@ouh.nhs.uk](mailto:Dave.Long@ouh.nhs.uk)

[helen.nelson2@nhs.net](mailto:helen.nelson2@nhs.net)