PMG 2019 was the first time that I had attended the conference. I attended the ISWP Wheelchair Provision course prior to the two-day conference, which has improved my knowledge of manual seating. I benefited from both the exhibit and the presentations, and felt the balance and range on offer was excellent.

One talk that was of particular interest to me was presented by Dr Chris Daniel on his recent work in manufacturing low cost pressure relieving cushions. Chris is based in the Rehabilitation Engineering Unit in Bryn Y Neuadd Hospital, Llanfairfechan, North Wales. Within their specialist centre, they possess the capabilities to manufacture and cover cushions. Chris was sharing successes in supporting some patients with complex posture and sever pressure risk by producing foam cushions that have a hole removed to offer complete offloading at a specific high pressure area.. To identify where this hole should be cut, Chris used pressure mapping. The areas of high pressure in the cases presented were below the ischial tuberosities.

Chris presented two cases where he had trialled the solution. In both cases, the newly manufactured cushion meant that the user could use their wheelchair for longer. Chris was keen to stress that this solution would not be suitable for everyone and may only apply in certain cases. In addition, a multi-disciplinary approach was used during the assessment and prescription of this type of cushion as a tissue viability nurse was consulted.

During the presentation, Chris used basic physics to back up his practice. When a person is seated, a force is applied to the cushion surface over the area that the user is contacting the cushion surface. Where there is a bony prominence, this means there is a high force acting downwards over a small area, and hence the resulting high pressure. Chris’ thought process was removing the cushion material underneath the bony prominence so the area that was underneath is zero. Therefore, there will be zero pressure on that bony prominence. Further into the presentation, Chris continued to state that the force that was being applied to this bony prominence had not disappeared, but it had been redistributed to the areas that are still in contact. For one patient, it was worked out that the remaining area that was in contact with the cushion would experience an additional 11% in load now that the hole had been cut away. From further pressure mapping, it was found that despite the additional load, the pressure was well distributed with no large peaks. Questions arose that by removing a hole in a cushion, then around that hole there will be high pressures experienced by the skin due to the edge of that hole. To minimise this effect, the edge was chamfered in order to reduce its harshness on the skin.

In the right scenario, this low cost solution is effective at reducing pressure experienced at bony prominences. Having a tissue viability nurse to assess the situation as well provides additional confidence when prescribing this solution. This is because the two healthcare professionals can assess the benefits and risks of the solution.

At the time of writing, I am currently two years into the three year Scientific Training Programme (STP). I am based in Morriston hospital in Swansea, specialising in Rehabilitation Engineering and I am particularly interested in specialist seating. I found attending PMG 2019 a fantastic experience. Being able to network with other healthcare professionals in the field is very valuable to discuss what is current at other services. In addition, learning about new products is very beneficial to further my knowledge of what is available to patients. I would like to thank PMG for very kindly offering me the bursary.